

FROM THE LIBRARY
OF
NELSON HENRY BEEMER, M.B.
THE GIFT OF
HIS FAMILY

Med
A

American Psychiatric Association

PROCEEDINGS

OF THE

American Medico-Psychological Association

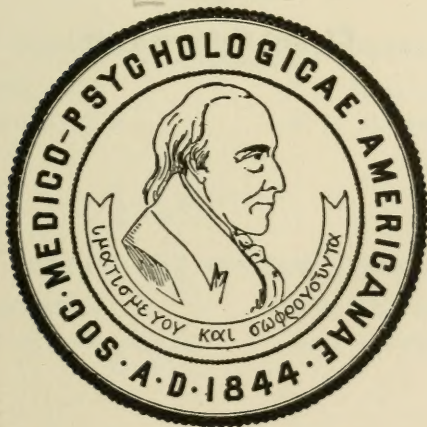
AT THE

SIXTY-SECOND ANNUAL MEETING

HELD IN

BOSTON, MASS., JUNE 12-15, 1906

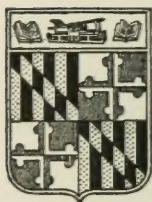
[Vol. 13]



PUBLISHED BY
AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION

1906

406721
24.10.42



The Lord Baltimore Press

BALTIMORE, MD., U. S. A.

RC
326
A5-
1906

1-5304
P.O. 1, A. 2

OFFICERS OF
American Medico-Psychological Association
FOR 1905-1906

COUNCIL

PRESIDENT	- - - - -	C. B. BURR, M. D.
VICE-PRESIDENT	- - - - -	C. G. HILL, M. D.
SECRETARY AND TREASURER	- - - - -	E. C. DENT, M. D.*
SECRETARY AND TREASURER ELECT BY COUNCIL,		CHAS. W. PILGRIM, M. D.
AUDITORS	- - - - -	{ A. W. HURD, M. D.
		{ W. H. HANCKER, M. D.

COUNCILORS FOR THREE YEARS

G. A. SMITH, M. D.	J. T. SEARCY, M. D.
W. F. BEUTLER, M. D.	N. H. BEEMER, M. D.

COUNCILORS FOR TWO YEARS

B. D. EVANS, M. D.	C. R. WOODSON, M. D.
ERNEST V. SCRIBNER, M. D.	JOHN S. TURNER, M. D.

COUNCILORS FOR ONE YEAR

THOMAS J. MITCHELL, M. D.	A. P. BUSEY, M. D.
C. G. WAGNER, M. D.	M. L. PERRY, M. D.

* Deceased.

OFFICERS OF
American Medico-Psychological Association
FOR 1906-1907

COUNCIL

PRESIDENT	-	-	-	-	-	-	-	C. G. HILL, M. D.
VICE-PRESIDENT	-	-	-	-	-	-	-	C. P. BANCROFT, M. D.
SECRETARY AND TREASURER	-	-	-	-	-	-	-	C. W. PILGRIM, M. D.
AUDITORS	-	-	-	-	-	-	-	{ G. F. EDENHARTER, M. D. J. PERCY WADE, M. D.

COUNCILORS FOR THREE YEARS

P. L. MURPHY, M. D.	W. A. WHITE, M. D.
R. H. CHASE, M. D.	H. C. EYMAN, M. D.

COUNCILORS FOR TWO YEARS

G. A. SMITH, M. D.	W. F. BEUTLER, M. D.
J. T. SEARCY, M. D.	N. H. BEEMER, M. D.

COUNCILORS FOR ONE YEAR

B. D. EVANS, M. D.	E. V. SCRIBNER, M. D.
C. R. WOODSON, M. D.	J. S. TURNER, M. D.

TABLE OF CONTENTS

List of Officers, 1905-1906.....	iii
List of Officers, 1906-1907.....	v
Table of Contents.....	vii
List of Members.....	9
Geographical Distribution of Members and Institutions.....	28
List of Honorary Members.....	44
Constitution	45
By-Laws	50
Proceedings of the Sixty-Second Annual Meeting.....	53
Address of Dr. George T. Tuttle.....	53
Address of Welcome of Governor Guild.....	54
" " " Doctor Cabot	56
" " " Doctor Walcott	58
Report of Committee of Arrangements.....	59
Report of the Council.....	62
Report of the Treasurer.....	63
Registration List of Members Present.....	65
" " " Visitors Present	70
Resolutions on "After Care".....	77
Report of Auditors.....	80
Presidential Address. The Physician as a Character in Fiction. By C. B. BURR, M. D.....	99
Annual Address. Psychiatry and Experimental Psychology. By Prof. R. S. WOODWORTH.....	125
The Unity of Insanity. By H. A. TOMLINSON, M. D.....	137
Discussion of Dr. Tomlinson's Paper.....	148
Paresis. A Research Contribution to its Bacteriology. By F. W. LANGDON, M. D. (One plate).....	153
Discussion of Dr. Langdon's Paper.....	161
Women Nurses on Wards for Men in Hospitals for the Insane. By CHAS. P. BANCROFT, M. D.....	163
The Male Nurse. By GEORGE T. TUTTLE, M. D.....	177
Night Nurses for the Insane. By C. R. WOODSON, M. D.....	191
The Training School in the Insane Hospital. By EDWARD B. LANE, M. D.	195
Discussion of Papers on Nursing.....	202
The History and Use of the Term Dementia. By G. ALDER BLUMER, M. D.	213
The Clinical Aspects of the Term Dementia with Special Reference to Differential Diagnosis. By IRWIN H. NEFF, M. D.	225
Psychoses. By J. T. SEARCY, M. D.....	231
Studies in Dementia, Abstract. By WILLIAM McDONALD, M. D.....	247
Prognosis of Treatment of Dementia. By C. K. CLARKE, M. D.....	261
Discussion of Papers on Dementia.....	264

Hysterical Insanity. Report of a Case Presenting Ganser's Symptom Complex. By HENRY P. FROST, M. D.....	271
Clinical and Pathological Report of a Case of Addison's Disease with Terminal Mental Symptoms. By HARRY W. MILLER, M. D.....	279
Insanity and Suicide. By CHAS. W. PILGRIM, M. D.....	289
Is Dementia Præcox the "New Peril" in Psychiatry?..By J. T. W. ROWE, M. D.	301
The Cerebellar-Vestibular Syndrome. By ISADOR H. CORIAT, M. D...	311
Discussion of Dr. Coriat's Paper.....	322
Cerebral Arteriosclerosis. By JAMES B. AYER, M. D.....	323
Further Experience in Family Care of the Insane in Massachusetts. By OWEN COPP, M. D.....	329
Discussion of Dr. Copp's Paper.....	343
Condition of the Heart in Dements. By EDWARD FRENCH, M. D.....	347
Discussion of Dr. French's Paper.....	351
Maniacal Conditions in Young Adults. With Abstracts of Cases. By CHESTER LEE CARLISLE, M. D.....	353
A Study of the Neurofibrils in Dementia Paralytica, Dementia Senilis. Chronic Alcoholism, Cerebral Lues, and Microcephalic Idiocy. By SOLOMON C. FULLER, M. D. (With thirteen plates.).....	377
Discussion of Dr. Fuller's Paper.....	426
Application of the Cottage System to the New Hospital. (Three plates.) By GEO. A. SMITH, M. D.....	433
Deterioration and Practical Psychiatry. By JOHN RUDOLPH KNAPP, M. D.	441
Discussion of Dr. Knapp's Paper.....	452
A Hospital Composite. By EVERETT FLOOD, M. D.....	455
Some Problems in Psychiatry and Penology. By CHARLES A. DREW, M. D. (One plate.).....	471
Discussion of Dr. Drew's Paper.....	482
Some Observations on the Medical Treatment of Insanity. By MAX E. WITTE, M. D.	483
The Treatment of Status Epilepticus. By M. L. PERRY, M. D.....	493
Discussion of Dr. Perry's Paper.....	498
Mal-Assimilation as a Causative Factor. By J. FRANK EDGERLY, M. D.	501
Statistics of the Insane. By MR. JOHN KOREN.....	505
Retrospect—Prospect. By H. C. EYMAN, M. D.....	511
Discussion of Dr. Eyman's Paper.....	521
European Hospitals for the Insane. By JOSEPH CLEMENT CLARK, M. D.	523
Musings Concerning Nurses in Hospitals for the Insane. By W. P. CRUMBACKER, M. D.	535
Memorial Notices:—	
Dr. William M. Edwards. By HERMAN OSTRANDER, M. D.....	565
Dr. Henry Putnam Stearns. By WHITEFIELD N. THOMPSON, M. D.....	567
Dr. Emmet Cooper Dent. By WM. AUSTIN MACY, M. D.....	573
Dr. Benjamin Blackford. By WILLIAM F. DREWRY, M. D.....	579
Dr. David Dorringtton Richardson. By MORRIS S. GUTH, M. D...	582
Dr. Charles H. Langdon. By CHARLES W. PILGRIM, M. D.....	586
Index	587

LIST OF MEMBERS.

- Abbot, E. Stanley, M. D., Assistant Physician McLean Hospital, Waverley, Mass.
- Adams, Geo. S., M. D., Medical Superintendent Westborough Insane Hospital, Westborough, Mass.
- Adams, Geo. Sheldon, M. D., Assistant Superintendent South Dakota Hospital for the Insane, Yankton, S. D.
- Adams, W. Herbert, M. D., 102 Liberty St., East, Savannah, Ga. (*Associate.*)
- Allen, Charles Lewis, M. D., Pathologist and Assistant Physician New Jersey State Hospital, Trenton, N. J.
- Allen, Henry D., M. D., Milledgeville, Ga.
- Allison, Wilmer L., M. D., Assistant Superintendent Southwestern Insane Asylum, San Antonio, Texas. (*Associate.*)
- Andrews, Clayton G., M. D. (formerly First Assistant Physician Vermont State Hospital, Waterbury, Vt.), 178 So. Prospect St., Burlington, Vt. (*Associate.*)
- Anglin, James V., M. D., Medical Superintendent Provincial Hospital, St. John, N. B.
- Applegate, Charles F., M. D., Medical Superintendent Mt. Pleasant State Hospital, Mt. Pleasant, Ia.
- Armstrong, George G., M. D., Second Assistant Physician Buffalo State Hospital, Buffalo, N. Y. (*Associate.*)
- Arthur, Daniel H., M. D., Superintendent Gowanda State Homeopathic Hospital, Gowanda, N. Y.
- Ashley, Maurice C., M. D., Medical Superintendent Middletown State Homeopathic Hospital, Middletown, N. Y.
- Atkins, Henry S., M. D., Superintendent City Insane Asylum, St. Louis, Mo.
- Atwood, Chas. E., M. D., Assistant Physician Vanderbilt Clinic, New York, N. Y. (*Associate.*)
- Ayer, James B., M. D., Member Massachusetts State Board of Insanity, 518 Beacon St., Boston, Mass.
- Babcock, J. W., M. D., Medical Superintendent State Hospital for the Insane, Columbia, S. C.
- Baker, Benjamin W., M. D., Assistant Physician Taunton Insane Hospital, Taunton, Mass. (*Associate.*)

- Baker, Jane Rogers, M. D., Superintendent Chester County Hospital for Insane, Embreeville, Pa.
- Baker, Raymond D., M. D., Formerly Assistant Physician New Jersey State Hospital, Morris Plains, N. J. (*Associate.*)
- Baldwin, Henry C., M. D., 126 Commonwealth Ave., Boston, Mass.
- Ballantine, Eveline P., M. D., Assistant Physician Rochester State Hospital, Rochester, N. Y. (*Associate.*)
- Bamford, Thos. E., M. D., 239 Delaware St., Syracuse, N. Y. (*Associate.*)
- Bancroft, Chas. P., M. D., Medical Superintendent New Hampshire State Hospital, Concord, N. H. (*Vice-President-elect.*)
- Bannister, Henry M., M. D. (formerly Assistant Physician Illinois Eastern Hospital for the Insane), 828 Judson Ave., Evanston, Ill. (*Honorary.*)
- Barnes, H. L., M. D., Contagious Hospital, Kingston Ave., Brooklyn, N. Y. (*Associate.*)
- Barrett, Albert M., M. D., Associate Professor of Psychiatry and Director of Wards, University Hospital, Ann Arbor, Mich.
- Bartlett, P. Challis, M. D., Assistant Physician Worcester Insane Asylum, Worcester, Mass. (*Associate.*)
- Beauchamp, John A., M. D., Medical Superintendent Central Hospital for the Insane, Nashville, Tenn.
- Becker, W. F., M. D., Consulting Neurologist Milwaukee County Hospital, 604 Goldsmith Building, Milwaukee, Wis.
- Beemer, Nelson H., M. D., Superintendent Mimico Asylum for the Insane, Toronto, Ont.
- Beling, Christopher C., M. D., Assistant Physician New Jersey State Hospital, Morris Plains, N. J.
- Bennett, Alice, M. D. (formerly Resident Physician Female Department Norristown State Hospital), Wrentham, Mass.
- Berkley, Henry J., M. D., 1305 Park Ave., Baltimore, Md.
- Betts, Joseph B., M. D., Assistant Physician Buffalo State Hospital, Buffalo, N. Y. (*Associate.*)
- Beutler, W. F., M. D., Medical Superintendent Asylum for the Chroni Insane, Wauwatosa, Wis.
- Blackburn, I. W., M. D., Pathologist Government Hospital for the Insane, Washington, D. C.
- Blumer, G. Alder, M. D., Medical Superintendent Butler Hospital, Providence, R. I. (*President, 1903.*)
- Bolton, James R., M. D., Physician-in-Charge Riverview, Fishkill-on-Hudson, N. Y.
- Bondurant, Eugene D., M. D. (formerly Assistant Superintendent Alabama Bryce Hospital), 166 Conti St., Mobile, Ala.
- Bradley, Isabel A., M. D., Pathologist and Assistant Physician Columbus State Hospital, Columbus, Ohio. (*Associate.*)
- Brochu, M. D., M. D., Superintendent Beauport Insane Asylum, Beauport, Quebec.

- Brooks, Ida J., M. D., Assistant Physician Westborough Insane Hospital, Westborough, Mass. (*Associate.*)
- Brower, D. R., M. D. (formerly Medical Superintendent Eastern State Hospital, Williamsburg, Va.), 34 and 36 Washington St., Chicago, Ill.
- Brown, Edson C., M. D., Assistant Physician Massillon State Hospital, Massillon, Ohio. (*Associate.*)
- Brown, John P., M. D., Medical Superintendent Taunton Insane Hospital, Taunton, Mass.
- Brown, Sanger, M. D., Attending Physician Cook County, St. Luke's, and St. Elizabeth's Hospitals, 100 State St., Chicago, Ill.
- Brown, W. Stuart, M. D., Physician-in-Charge Sanford Hall, Flushing, New York, N. Y.
- Brownrigg, Albert Edward, M. D., Medical Superintendent Highland Spring Sanatorium, Nashua, N. H.
- Brush, Edward N., M. D., Physician-in-Chief and Superintendent Sheppard and Enoch Pratt Hospital, Towson, Md.
- Bryant, Percy, M. D. (formerly Medical Superintendent Male Department Manhattan State Hospital), 134 Hawthorne St., Brooklyn, N. Y.
- Buchan, H. E., M. D., Assistant Superintendent Asylum for the Insane, London, Ont. (*Associate.*)
- Buchanan, J. M., M. D., Medical Superintendent East Mississippi Insane Hospital, Meridian, Miss.
- Buckley, James M., D. D., LL. D., Morristown, N. J. (*Honorary.*)
- Bullard, E. L., M. D. (formerly Superintendent Wisconsin State Hospital for the Insane, Mendota, Wis.), 402 Camp Building, Milwaukee, Wis.
- Burdick, Charles M., M. D., Assistant Physician St. Lawrence State Hospital, Ogdensburg, N. Y. (*Associate.*)
- Burrell, Dwight R., M. D., Resident Physician Brigham Hall, Canandaigua, N. Y.
- Burgess, T. J. W., M. D., Medical Superintendent Protestant Hospital for the Insane, Box 2381, Montreal, Que. (*President, 1905.*)
- Burnet, Anne, M. D., Assistant Physician Mt. Pleasant State Hospital, Mt. Pleasant, Ia.
- Burr, C. B., M. D., Medical Director Oak Grove Hospital, Flint, Mich. (*President, 1906.*)
- Busey, A. P., M. D., Superintendent Colorado State Insane Asylum, Pueblo, Col.
- Calder, Daniel H., M. D., Superintendent State Mental Hospital, Provo City, Utah.
- Campbell, George B., M. D., Medical Examiner, New York State Board of Alienists, 78 Irving Place, New York. (*Associate.*)
- Campbell, Merritt B., M. D. (formerly Medical Superintendent Southern California State Hospital), 1608 Orange St., Los Angeles, Cal.

- Campbell, Michael, M. D., Medical Superintendent Eastern Hospital for the Insane, Knoxville, Tenn.
- Caples, Byron M., M. D., Medical Superintendent Waukesha Springs Sanitarium, Waukesha, Wis.
- Carey, Harris May, M. D., Assistant Physician Hospital for the Insane, Retreat, Luzerne County, Pa. (*Associate.*)
- Carlisle, Chester Lee, M. D., Assistant Physician Willard State Hospital, Willard, N. Y. (*Associate.*)
- Carriel, Henry B., M. D., Superintendent Illinois Central Hospital for the Insane, Jacksonville, Ill.
- Carriel, Henry F., M. D. (formerly Medical Superintendent Illinois Central Hospital for the Insane), Jacksonville, Ill.
- Chaddock, Chas. G., M. D., 3750 Lindell Boulevard, St. Louis, Mo.
- Chagnon, E. Philippe, M. D., Physician to Notre Dame Hospital, 119a Laval Ave., Montreal, Que.
- Chamberlain, G. L., M. D., Medical Superintendent Upper Peninsula Hospital for the Insane, Newberry, Mich.
- Channing, Walter, M. D., Channing Sanitarium, Brookline, Mass.
- Chapin, John B., M. D., Physician and Superintendent Pennsylvania Hospital for the Insane, Philadelphia, Pa.
- Chase, Robert H., M. D., Medical Superintendent Friends' Asylum, Frankford, Philadelphia, Pa.
- Cheatham, Wm. A., M. D. (formerly Superintendent Central Hospital for the Insane), Nashville, Tenn.
- Chilgren, G. A., M. D. (formerly Assistant Superintendent South Dakota Hospital for the Insane), Sauk Rapids, Minn.
- Christian, Edmund A., M. D., Medical Superintendent Eastern Michigan Asylum, Pontiac, Mich.
- Christianity, Mary, M. D., First Assistant Physician Department for Women Norristown State Hospital, Norristown, Pa. (*Associate.*)
- Clark, Daniel, M. D., (formerly Medical Superintendent Asylum for the Insane, Toronto, Ont.). (*Honorary.*)
- Clark, Joseph Clement, M. D., Superintendent Springfield State Hospital, Sykesville, Md.
- Clark, L. Pierce, M. D., Consulting Neurologist Central Islip State Hospital, 23 West 58th Street, New York, N. Y.
- Clarke, Chas. K., M. D., Medical Superintendent Toronto Asylum, 999 Queen St., West, Toronto, Ont.
- Clarke, Homer E., M. D., Assistant Physician Eastern Michigan Asylum, Pontiac, Mich. (*Associate.*)
- Clouston, Thos. S., M. D., F. R. C. P., F. R. S. E., Physician-Superintendent Edinburgh Royal Asylum, Morningside, Edinburgh, Scotland. (*Honorary.*)
- Coe, Henry W., M. D., Medical Director Crystal Springs, Portland, Ore.
- Coggins, Jesse C., M. D., Medical Director The Laurel Sanitarium, Laurel, Md. (*Associate.*)

- Colby, Fred B., M.D. (formerly Assistant Physician Women's Department Boston Insane Hospital), Highland Falls, N. Y. (*Associate.*)
- Coleburn, Arthur B., M.D., Assistant Physician Connecticut Hospital for the Insane, Middletown, Conn. (*Associate.*)
- Coles, William W., M.D., Assistant Physician Westborough Insane Hospital, Westborough, Mass. (*Associate.*)
- Cook, Geo. F., M.D., Superintendent Oxford Retreat, Oxford, Ohio.
- Cook, R. Harvey, M.D., Assistant Physician Oxford Retreat, Oxford, Ohio.
- Copp, Owen, M.D., Executive Officer State Board of Insanity, State House, Boston, Mass.
- Coriat, Isador H., M.D., Assistant Physician Worcester Insane Hospital, Worcester, Mass. (*Associate.*)
- Cort, Paul Lange, M.D., Assistant Physician New Jersey State Hospital, Trenton, N. J. (*Associate.*)
- Cossitt, H. Austin, M.D., Second Assistant Physician and Pathologist New Jersey State Hospital, Morris Plains, N. J. (*Associate.*)
- Cotton, Harry A., M.D., Assistant Physician Danvers Insane Hospital, Hathorne, Mass. (*Associate.*)
- Courtney, J. Elvin, M.D., Proprietor Mount Airy Sanitorium, Denver, Col.
- Cowles, Edward, M.D. (formerly Medical Superintendent McLean Hospital, Waverley), Warren Chambers, 419 Boylston St., Boston, Mass. (*President, 1895.*)
- Crandall, Geo. C., M.D., 4287 Olive St., St. Louis, Mo.
- Crumbacker, W. P., M.D., Medical Superintendent Independence State Hospital, Independence, Ia.
- Daniels, Frederick H., M.D., Bellevue Place, Batavia, Ill. (*Associate.*)
- Darling, W. H., M.D., Assistant Superintendent St. Peter State Hospital, St. Peter, Minn. (*Associate.*)
- Darnall, Rolland F., M.D., Assistant Superintendent Woodcroft Hospital, Pueblo, Col. (*Associate.*)
- Delacroix, Arthur C., M.D., Brooklyn, N. Y. (*Associate.*)
- De Weese, Cornelius, M.D., Medical Director The Laurel Sanitarium, Laurel, Md. (*Associate.*)
- Dewey, Chas. G., M.D., Examining Physician Registration Department City of Boston, 539 Talbot Ave., Dorchester, Boston, Mass.
- Dewey, Richard, M.D., Physician-in-Charge Milwaukee Sanitarium, Wauwatosa, Wis. (*President, 1896.*)
- Dewing, Oliver M., M.D., Medical Superintendent Long Island State Hospital, Brooklyn, N. Y.
- Diefendorf, Allen Ross, M.D., Pathologist Connecticut Hospital for the Insane, Middletown, Conn.
- Dill, D. M., M.D., Superintendent Essex County Hospital for the Insane, South Orange Ave., Newark, N. J.
- Dold, William E., M.D., Physician-in-Charge River Crest, Astoria, L. I.

- Doran, Robert E., M. D., Assistant Physician Willard State Hospital, Willard, N. Y.
- Douglas, A. E., M. D., Assistant Physician Central Hospital for the Insane, Nashville, Tenn. (*Associate.*)
- Drew, Chas. A., M. D., Medical Director Asylum for Insane Criminals, State Farm, Mass.
- Drewry, William F., M. D., Medical Superintendent Central State Hospital, Petersburg, Va.
- Dunton, Wm. Rush, Jr., M. D., First Assistant Physician Sheppard and Enoch Pratt Hospital, Towson, Md.
- Durham, Albert, M. D., Assistant Physician Bloomingdale Asylum, White Plains, N. Y. (*Associate.*)
- Eastman, B. D., M. D. (formerly Superintendent Christ's Hospital), Topeka, Kans.
- Edenharter, Geo. F., M. D., Medical Superintendent Central Indiana Hospital for the Insane, Indianapolis, Ind.
- Edgerly, J. Frank, M. D., 1 Mt. Vernon Terrace, Newtonville, Mass.
- Edwards, John B., M. D. (formerly Medical Superintendent Wisconsin State Hospital), Mauston, Wis.
- Elliott, Hiram, M. D., Superintendent Marshall Sanitarium, Troy, N. Y.
- Elliott, Robert M., M. D., Medical Superintendent Willard State Hospital, Willard, N. Y.
- Emerson, Justin E., M. D., Attending Physician St. Joseph's Retreat, Dearborn, Mich.; Attending Neurologist Harper Hospital and Children's Free Hospital, Detroit, 128 Henry St., Detroit, Mich.
- Eshner, Augustus A., M. D., Professor of Clinical Medicine in the Philadelphia Polyclinic; Physician to the Philadelphia Hospital; Assistant Physician to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases; Physician to the Hospital for Diseases of the Lungs, at Chestnut Hill, 1019 Spruce St., Philadelphia, Pa.
- Evans, B. D., M. D., Medical Director New Jersey State Hospital, Morris Plains, N. J.
- Eyman, H. C., M. D., Medical Superintendent Massillon State Hospital, Massillon, Ohio.
- Felty, John C., M. D., Assistant Physician New Jersey State Hospital, Trenton, N. J. (*Associate.*)
- Fernald, Walter E., M. D., Superintendent Massachusetts School for the Feeble-Minded, Waverley, Mass.
- Fisher, Theodore W., M. D. (formerly Medical Superintendent Boston Insane Hospital), Boston, Mass.
- Fitzgerald, John F., M. D., General Medical Superintendent King's County Hospital, Brooklyn, N. Y.
- Flint, Austin, M. D., Consulting Physician Manhattan State Hospital, 118 E. 19th St., New York, N. Y.
- Flood, Everett, M. D., Superintendent Massachusetts Hospital for Epileptics, Palmer, Mass.

- Folsom, Chas. F., M.D., 15 Marlboro St., Boston, Mass. (*Honorary.*)
- Foster, L. S., M.D., Superintendent Eastern State Hospital, Williamsburg, Va.
- Franklin, Chas. M., M.D. (formerly First Assistant Physician Sheppard and Enoch Pratt Hospital), Towson, Md.
- French, Edward, M.D., Superintendent Medfield Insane Asylum, Harding, Mass.
- Frost, Henry P., M.D., Assistant Physician Buffalo State Hospital, Buffalo, N. Y. (*Associate.*)
- Fry, Frank R., M.D., Professor of Neurology Medical Department Washington University; Consulting Neurologist to St. Louis Insane Asylum, Humboldt Building, St. Louis, Mo.
- Fuller, Solomon Carter, M.D., Pathologist Westborough Insane Hospital, Westborough, Mass. (*Associate.*)
- Garlick, J. H., M.D., Assistant Physician Western State Hospital, Staunton, Va. (*Associate.*)
- Garrett, R. Edward, M.D., Assistant Physician Maryland Hospital for the Insane, Catonsville, Md. (*Associate.*)
- Gillette, Walter R., M.D., Consulting Physician Manhattan State Hospital, 24 W. Fortieth St., New York, N. Y.
- Givens, A. J., M.D., Stamford Hall, Stamford, Conn.
- Givens, John W., M.D., Medical Superintendent Northern Idaho Insane Asylum, Orofino, Idaho.
- Goodwin, Harold C., M.D., Assistant Physician New Hampshire State Hospital, Concord, N. H. (*Associate.*)
- Goodwill, V. L., M.D., and C. M., Medical Superintendent Hospital for the Insane, Charlottetown, P. E. I.
- Gordon, W. A., M.D., Superintendent Northern Hospital for the Insane, Winnebago, Wis.
- Gorst, Charles, M.D., Superintendent State Hospital for the Insane, Mendota, Wis.
- Gorton, Eliot, M.D., Superintendent Fair Oaks Sanatorium, 26 New England Ave., Summit, N. J.
- Goss, Arthur V., M.D., Assistant Physician Taunton Insane Hospital, Taunton, Mass.
- Granger, Wm. D., M.D., Vernon House, Bronxville, N. Y.
- Graves, Marvin L., M.D., University of Texas, Galveston, Texas.
- Green, Edward M., M.D., Assistant Physician Georgia State Sanitarium, Milledgeville, Ga. (*Associate.*)
- Gundry, Alfred T., M.D., Resident Physician The Gundry Sanitarium, Athol, Catonsville, Md.
- Gundry, Richard F., M.D., Member Board of Directors Springfield State Hospital; Superintendent The Richard Gundry Home, Catonsville, Md.
- Guth, Morris S., M.D., Superintendent and Physician-in-Chief State Hospital for the Insane, Warren, Pa.

- Guthrie, L. V., M. D., Superintendent West Virginia Asylum, Huntington, W. Va.
- Hall, G. Stanley, Ph. D., LL.D., President Clark University, Worcester, Mass. (*Honorary.*)
- Hall, Henry C., M. D., Assistant Physician Butler Hospital, Providence, R. I. (*Associate.*)
- Hall, Lemuel T., M. D. (formerly Medical Superintendent State Hospital, No. 4), Farmington, Mo.
- Hancker, W. H., M. D., Medical Superintendent Delaware State Hospital, Farnhurst, Del.
- Hanes, Edward L., M. D., Assistant Physician Rochester State Hospital, Rochester, N. Y. (*Associate.*)
- Harding, Geo. T., Jr., M. D., Superintendent Washington Branch Sanitarium, No. 2, Iowa Circle, Washington, D. C.
- Harmon, F. W., M. D., Medical Superintendent Longview Hospital, Carthage, Ohio.
- Harrington, Arthur H., M. D., 224 Second Ave., New York.
- Harris, Isham G., M. D., Acting Superintendent Hudson River State Hospital, Poughkeepsie, N. Y.
- Harrison, Daniel A., M. D., Breezehurst Terrace, Whitestone, L. I., N. Y.
- Hattie, W. H., M. D., Medical Superintendent Nova Scotia Hospital, Halifax, N. S.
- Haviland, Clarence Floyd, M. D., Assistant Physician Manhattan State Hospital, Ward's Island, New York, N. Y. (*Associate.*)
- Heyman, Marcus B., M. D., First Assistant Physician Central Islip State Hospital, Central Islip, L. I., N. Y.
- Hildreth, J. L., M. D. (formerly Member Board of Lunacy and Charity of Massachusetts), 14 Garden St., Cambridge, Mass.
- Hill, Chas. G., M. D., Attending Physician Mt. Hope Retreat, Baltimore, Md. (*President-Elect.*)
- Hill, Gershom H., M. D., Superintendent "The Retreat," Equitable Bldg., Des Moines, Ia.
- Hill, Horace B., M. D., Assistant Medical Superintendent Maine Insane Hospital, Augusta, Me. (*Associate.*)
- Hill, S. S., M. D., Superintendent State Asylum for the Chronic Insane, Wernersville, Pa.
- Hills, Frederick L., M. D., Assistant Superintendent New Hampshire State Hospital, Concord, N. H. (*Associate.*)
- Hinckley, L. S., M. D. (formerly Medical Superintendent Essex County Hospital), Newark, N. J.
- Hirsch, Wm. M.D., Neurologist to the German Poliklinik; Clinical Assistant in Department of Mental Diseases Cornell University Medical School, 52 E. Sixty-fourth St., New York, N. Y.
- Hitchcock, Chas. W., M. D., Attending Neurologist Harper Hospital, 270 Woodward Ave., Detroit, Mich.
- Hobbs, Alfred T., M. D., Superintendent Homewood Sanitarium, Guelph, Ont.

- Hoch, August, M.D., First Assistant Physician Bloomingdale, White Plains, N. Y. (*Associate.*)
- Hoch, Theodore A., M.D., Assistant Physician Worcester Insane Hospital, Worcester, Mass. (*Associate.*)
- Holley, Erving, M.D., Assistant Physician Willard State Hospital, Willard, N. Y. (*Associate.*)
- Houston, John A., M.D., Medical Superintendent Northampton Insane Hospital, Northampton, Mass.
- Howard, A. B., M.D., Medical Superintendent Cleveland State Hospital, Cleveland, Ohio.
- Howard, Emily Pagelson, M.D., Mass. General Hospital, Boston, Mass.
- Howard, Eugene H., M.D., Medical Superintendent Rochester State Hospital, Rochester, N. Y.
- Howard, Herbert B., M.D., Massachusetts General Hospital, Boston, Mass.
- Howland, Joseph B., M.D., Superintendent State Colony for the Insane, Gardner, Mass.
- Hughes, Chas. H., M.D. (formerly Medical Superintendent State Asylum No. 1, Fulton), Editor Alienist and Neurologist; Dean of Faculty Barnes Medical College, 3872 Washington Boulevard, St. Louis, Mo.
- Hun, Henry, M.D., Albany, N. Y. (*Honorary.*)
- Hurd, Arthur W., M.D., Medical Superintendent Buffalo State Hospital, Buffalo, N. Y.
- Hurd, Henry M., M.D., Superintendent Johns Hopkins Hospital, Baltimore, Md. (*President, 1899.*)
- Hutchings, Richard H., M.D., Medical Superintendent St. Lawrence State Hospital, Ogdensburg, N. Y.
- Hutchinson, Anna E., M.D., Woman Assistant Physician Manhattan State Hospital, Ward's Island, New York, N. Y. (*Associate.*)
- Hutchinson, Henry A., M.D., Medical Superintendent Western Pennsylvania Hospital for the Insane, Dixmont, Pa.
- Hutchinson, Marcello, M.D. (formerly Superintendent Vermont State Hospital for the Insane), Waterbury, Vt.
- Huyck, Clifford J., M.D., Gilbertville, Mass. (*Associate.*)
- Inch, Geo. Franklin, M.D., Assistant Physician Michigan Asylum for the Insane, Kalamazoo, Mich. (*Associate.*)
- Jelly, Arthur C., M.D., 69 Newberry St., Boston, Mass.
- Jelly, Geo. F., M.D., Chairman Massachusetts State Board of Insanity, 69 Newberry St., Boston, Mass.
- Karpas, Morris J., M.D., Assistant Physician Manhattan State Hospital, Ward's Island, N. Y. (*Associate.*)
- Keith, Frank L., M.D. (formerly Superintendent State Hospital No. 4 Farmington), Flat River, Mo.
- Kellogg, Theo. H., M.D. (formerly Medical Superintendent Willard State Hospital), Riverdale Lane and Albany Postroad, Riverdale, New York, N. Y.

- Kelly, James F., M.D., Assistant Physician Cleveland State Hospital, Cleveland, Ohio. (*Associate.*)
- Kilbourne, Arthur F., M.D., Medical Superintendent Rochester State Hospital, Rochester, Minn.
- Kindred, J. Joseph, M.D., Consulting Physician and Business Manager River-Crest Sanitarium, Astoria, L. I., N. Y.
- Kinney, C. Spencer, M.D., Proprietor Easton Sanitarium, Easton, Pa.
- Kline, George M., M.D., Resident Physician Psychopathic Wards, University Hospital, Ann Arbor, Mich. (*Associate.*)
- Klopp, Henry I., M.D., Assistant Physician Westborough Insane Hospital, Westborough, Mass. (*Associate.*)
- Knapp, John Rudolph, M.D., Assistant Physician Manhattan State Hospital, Ward's Island, New York, N. Y. (*Associate.*)
- Knight, Geo. H., M.D., Superintendent Connecticut School for Imbeciles, Lakeville, Conn.
- Knowlton, W. M., M.D., Channing Sanitarium, Brookline, Mass.
- Kuhlman, Helene J. C., M.D., Assistant Physician Buffalo State Hospital, Buffalo, N. Y. (*Associate.*)
- Kunst, A. H., M.D., Superintendent West Virginia Hospital for the Insane, Weston, W. Va.
- Lamb, Robert B., M.D., Medical Superintendent Matteawan State Hospital, Fishkill Landing, N. Y.
- La Moure, Chas. T., M.D., Assistant Physician Rochester State Hospital, Rochester, N. Y. (*Associate.*)
- Lane, Edward B., M.D. (formerly Superintendent Boston Insane Hospital, New Dorchester, Mass), 419 Boylston St., Boston, Mass.
- Langdon, F. W., M.D., Professor Nervous and Mental Diseases Miami Medical College; Neurologist to Cincinnati Hospital; Medical Director Cincinnati Sanitarium, 5 Garfield Place, Cincinnati, Ohio.
- Laughlin, Charles E., M.D., Superintendent Southern Indiana Hospital for the Insane, Evansville, Indiana.
- Lawton, Shailer E., M.D., Medical Superintendent Brattleboro Retreat, Brattleboro, Vt.
- Leak, Roy L., M.D., Assistant Physician St. Lawrence State Hospital, Ogdensburg, N. Y. (*Associate.*)
- Letchworth, William Pryor, LL.D., Glen Iris, Castile P. O., N. Y. (*Honorary.*)
- Lewis, J. M., M.D. (formerly Superintendent Cleveland State Hospital), Cleveland, Ohio.
- Logie, Benjamin Rush, M.D., Assistant Physician Government Hospital for the Insane, Washington, D. C. (*Associate.*)
- Ludlum, Seymour DeWitt, M.D., Assistant Physician Friends' Asylum, Frankford, Philadelphia, Pa. (*Associate.*)
- Lyon, Samuel B., M.D., Medical Superintendent Bloomingdale Asylum, White Plains, N. Y.

- Lyons, A. J., M.D., Superintendent Second Hospital for the Insane, Spencer, W. Va.
- Mabon, William, M.D., Superintendent Manhattan State Hospital, Ward's Island, New York, N. Y.
- Macartney, Chas. B., M.D., Assistant Physician Oak Grove Hospital, Flint, Mich. (*Associate.*)
- MacCallum, G. A., M.D., Superintendent Asylum for the Insane, London, Ont.
- MacClymont, DeWitt C., M.D., Assistant Physician Kings Park State Hospital, Kings Park, L. I. (*Associate.*)
- Macdonald, Alexander E., M.D. formerly Superintendent Manhattan State Hospital East, Ward's Island), Columbia Court, 431 Riverside Ave., cor. 115th St., New York City. (*President, 1904.*)
- MacDonald, Carlos F., M.D., 70 W. Forty-sixth St., New York, N. Y.
- Mackintosh, James A., M.D., Assistant Physician Worcester Insane Hospital, Worcester, Mass.
- Macphail, Andrew, M.D., M. R. C. S., Eng., L. R. C. P., London; Professor of Pathology and Bacteriology University of Bishop's College, Montreal; Pathologist to Protestant Hospital for the Insane, Montreal, Que. (*Associate.*)
- McBride, James H., M.D., Pasadena, Cal.
- McDonald, William, M.D., Assistant Physician Butler Hospital, Providence, R. I.
- McGeorge, James M., M.D., Assistant Physician Massillon State Hospital, Massillon, Ohio. (*Associate.*)
- McGugan, Arthur, M.D. (formerly Assistant Physician Michigan Asylum for the Insane), 412-413 McPhee blk., Denver, Col.
- McKee, James, M.D., Superintendent State Hospital, Raleigh, N. C.
- McKelway, John Irvine, M.D., Assistant Physician Kings Park State Hospital, Kings Park, L. I. (*Associate.*)
- McNicholl, Eugene C., M.D. (formerly Medical Superintendent Cobourg Asylum for the Insane), Cobourg, Ont.
- Macy, Wm. Austin, M.D., Medical Superintendent Kings Park State Hospital, Kings Park, L. I., N. Y.
- Magness, Frank Hosmer, M.D., Assistant Physician Manhattan State Hospital, Ward's Island, New York, N. Y. (*Associate.*)
- Mallon, Peter S., M.D., Assistant Physician New Jersey State Hospital, Morris Plains, N. J.
- Manchester, G. H., M.D., Medical Superintendent Public Hospital for the Insane, New Westminster, B. C.
- Manton, Walter P., M.D., Gynecologist Eastern and Northern Michigan Asylums; Consulting Gynecologist St. Joseph's Retreat, 32 Adams Ave. West, Detroit, Mich.
- Maxfield, Geo. H., M.D., Assistant Physician Boston Insane Hospital, Mattapan, Mass. (*Associate.*)

- Maxwell, T. O., M. D., Superintendent Southwestern Insane Asylum, San Antonio, Texas. (*Associate.*)
- Mayberry, Chas. B., M. D., Superintendent Hospital for the Insane of the Central Poor District of Luzerne County, Retreat, Luzerne Co., Pa.
- Mayer, Edward E., M. D., Alternate Alienist St. Francis Hospital; Associate Professor Mental and Nervous Diseases Medical Department Western University of Pennsylvania; 524 Penn Ave., Pittsburgh, Pa.
- Mead, Leonard C., M. D., Medical Superintendent South Dakota Hospital for the Insane, Yankton, S. D.
- Meredith, Hugh B., M. D., Medical Superintendent State Hospital for the Insane, Danville, Pa.
- Meyer, Adolf, M. D., Director Pathological Institute, Ward's Island, New York, N. Y.
- Miller, Harry William, M. D., Pathologist and Assistant Physician Taunton Insane Hospital, Taunton, Mass.
- Mills, Chas. K., M. D., Professor of Neurology University of Pennsylvania, 1909 Chestnut St., Philadelphia, Pa.
- Mills, Wesley, A. M., M. D., Professor of Physiology McGill University, Montreal, Que. (*Honorary.*)
- Mitchell, H. Walter, M. D., Senior Assistant Physician Danvers Insane Hospital, Hathorne, Mass. (*Associate.*)
- Mitchell, S. Weir, M. D., Philadelphia, Pa. (*Honorary.*)
- Mitchell, Thomas J., M. D., Superintendent State Insane Hospital, Asylum, Miss.
- Moher, Thomas J., M. D., Medical Superintendent Brockville Asylum, Brockville, Ont.
- Montgomery, Wm. H., M. D., Assistant Physician Willard State Hospital, Willard, N. Y. (*Associate.*)
- Moody, G. H., M. D., Superintendent Dr. Moody's Sanitarium, 315 Brackenridge Avenue, San Antonio, Texas.
- Mooers, Emma W., M. D., Assistant Physician McLean Hospital, Waverley, Mass.
- Moore, Dwight S., M. D., Medical Superintendent North Dakota Hospital for the Insane, Jamestown, N. D.
- Morel, Jules, M. D., Medical Superintendent State Asylum; Commissioner in Lunacy, Mons, Belgium. (*Honorary.*)
- Morse, Jason, M. D., Assistant Superintendent Eastern Michigan Asylum, Pontiac, Mich.
- Moseley, Wm. B., M. D., Assistant Physician King's County Hospital, Brooklyn, N. Y. (*Associate.*)
- Mosher, J. Montgomery, M. D., 170 Washington Ave., Albany, N. Y.
- Motet, A. M., M. D., 161 Rue de Charonne, Paris, France. (*Honorary.*)
- Moulton, A. R., M. D., Senior Assistant Physician Pennsylvania Hospital for the Insane, Philadelphia, Pa.
- Munson, James D., M. D., Medical Superintendent Northern Michigan Asylum, Traverse City, Mich.

- Murphy, P. L., M. D., Medical Superintendent State Hospital, Morganton, N. C.
- Nairn, B. Ross, M. D., Assistant Physician Buffalo State Hospital, Buffalo, N. Y. (*Associate.*)
- Neff, Irwin H., M. D., Assistant Physician Eastern Michigan Asylum, Pontiac, Mich.
- Nevin, Ethan A., M. D., Assistant Physician St. Lawrence State Hospital, Ogdensburg, N. Y. (*Associate.*)
- Nichols, John H., M. D., Resident Physician and Superintendent State Hospital, Tewksbury, Mass.
- Nims, Edward B., M. D. (formerly Superintendent Northampton Insane Hospital), 40 Harvard St., Springfield, Mass.
- Noble, Alfred I., M. D., Superintendent Michigan Asylum for the Insane, Kalamazoo, Mich.
- Noble, Henry S., M. D., Superintendent Connecticut Hospital for the Insane, Middletown, Conn.
- Norbury, Frank P., M. D., Jacksonville, Ill.
- North, Charles H., M. D., Superintendent Dannemora State Hospital, Dannemora, N. Y.
- Noyes, William, M. D., Superintendent Boston Insane Hospital, Mattapan, Mass.
- Nunemaker, Henry B., M. D., Assistant Physician Pennsylvania Hospital for the Insane, Philadelphia, Pa. (*Associate.*)
- O'Brien, John D., M. D., Pathologist and Assistant Physician Massillon State Hospital, Massillon, Ohio. (*Associate.*)
- O'Hanlon, George, M. D., Assistant Physician Kings Park State Hospital, Kings Park, L. I. (*Associate.*)
- Orth, H. L., M. D., Superintendent and Physician Pennsylvania State Lunatic Hospital, Harrisburg, Pa.
- Ostrander, Herman, M. D., Assistant Physician Michigan Asylum for the Insane, Kalamazoo, Mich.
- Packer, Flavius, M. D., Physician-in-Charge The Knolls, 261st Street and Broadway, New York.
- Page, Chas. W., M. D., Superintendent and Physician Danvers Insane Hospital, Hathorne, Mass.
- Page, H. W., M. D., Superintendent Hospital Cottages for Children, Baldwinville, Mass.
- Paine, N. Emmons, M. D. (formerly Superintendent Westborough Insane Hospital), The Newton Sanitarium, West Newton, Mass.
- Palmer, Harold L., M. D., Superintendent Utica State Hospital, Utica, N. Y.
- Parant, Victor, M. D., Toulouse, France. (*Honorary.*)
- Parsons, Frederick W., M. D., Second Assistant Physician Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)
- Parsons, Ralph L., M. D., Private Hospital for Mental Diseases, Greenmont-on-Hudson, Ossining, Postoffice, N. Y.

- Paton, Stewart, M. D., Director of Laboratory Sheppard and Enoch Pratt Hospital; Associate in Psychiatry Johns Hopkins University, Baltimore, Md.
- Pease, Caroline S., M. D., Assistant Physician St. Lawrence State Hospital, Ogdensburg, N. Y. (*Associate.*)
- Perry, Middleton L., M. D., Superintendent Kansas State Hospital for Epileptics, Parsons, Kans.
- Peterson, Frederick, M. D., Instructor in Nervous and Mental Diseases Columbia College, 4 W. Fiftieth St., New York, N. Y.
- Pettit, Louis C., M. D., Assistant Physician Manhattan State Hospital, Ward's Island, New York, N. Y. (*Associate.*)
- Pilgrim, Charles W., M. D., President State Commission in Lunacy, Poughkeepsie, N. Y. (*Secretary-Treasurer.*)
- Pomeroy, E. H., M. D., Monterey, Tenn.
- Porteus, Carlyle A., M. D., Assistant Superintendent Protestant Hospital for the Insane, Montreal, Can. (*Associate.*)
- Potter, Ezra B., M. D., Assistant Physician Rochester State Hospital, Rochester, N. Y.
- Powell, Theophilus O., M. D., Medical Superintendent Georgia State Sanitarium, Milledgeville, Ga. (*President, 1897.*)
- Preston, John, M. D., Superintendent State Epileptic Colony, Abilene, Texas.
- Preston, R. J., M. D., Medical Superintendent Southwestern State Hospital, Marion, Va. (*President, 1902.*)
- Prout, Thos. P., M. D., Assistant Physician Fair Oaks, Summit, N. J. (*Associate.*)
- Punton, John, M. D., Superintendent Private Sanitarium; Professor Nervous and Mental Diseases University Medical College, Kansas City, Mo.
- Putnam, Emma, M. D. (formerly Assistant Physician Hudson River State Hospital), Poughkeepsie, N. Y.
- Quinby, Hosea M., M. D., Medical Superintendent Worcester Insane Hospital, Worcester, Mass.
- Ratliff, J. M., M. D., Resident Medical Superintendent Dayton Sanitarium, Dayton, Ohio.
- Redwine, J. S., M. D., Superintendent Eastern Kentucky Asylum for the Insane, Lexington, Ky.
- Régis, Emmanuel, M. D., Bordeaux, France. (*Honorary.*)
- Richardson, Wm. W., M. D., Assistant Physician Philadelphia Hospital, Insane Department, Philadelphia, Pa. (*Associate.*)
- Riggs, Charles Eugene, M. D., Professor of Nervous and Mental Diseases University of Minnesota; Chairman Lunacy Commission, 595 Dayton Ave., St. Paul, Minn.
- Ritti, Antoine, M. D., Maison Nationale de Charenton, Charenton, près Paris, France. (*Honorary.*)

- Robertson, Frank W., M.D. (formerly General Superintendent New York State Reformatory at Elmira), 411 West End Ave., New York.
- Robinson, J. F., M.D. (formerly Medical Superintendent State Hospital No. 3), Nevada, Mo.
- Rogers, Arthur C., M.D., Superintendent Minnesota School for the Feeble-Minded and Colony for Epileptics, Faribault, Minn.
- Rogers, Joseph G., M.D., Medical Superintendent Northern Indiana Hospital for the Insane, Longcliff, Logansport, Ind. (*President, 1900.*)
- Rowe, G. H. M., M.D., Superintendent and Resident Physician City Hospital, Boston, Mass.
- Rowe, John T. W., M.D., First Assistant Physician Manhattan State Hospital, Ward's Island, New York, N. Y.
- Russell, James, M.D., Medical Superintendent Asylum for the Insane, Hamilton, Ont.
- Russell, Wm. L., M.D., Medical Inspector State Lunacy Commission, 112 Market Street, Poughkeepsie, N. Y.
- Rutherford, James, M.D., F.R.C.P., Edin., F.F.P.S., Superintendent Crichton Royal Asylum, Dumfries, Scotland. (*Honorary.*)
- Ryon, Walter G., M.D., Assistant Physician St. Lawrence State Hospital, Ogdensburg, N. Y. (*Associate.*)
- Sachs, B., M.D., 21 E. Sixty-fifth St., New York, N. Y.
- Sanborn, Bigelow T., M.D., Medical Superintendent Maine Insane Hospital, Augusta, Me.
- Schmid, H. Ernest, M.D., White Plains, N. Y.
- Scribner, Ernest V., M.D., Medical Superintendent Worcester Insane Asylum, Worcester, Mass.
- Searcy, James T., M.D., Medical Superintendent The Alabama Hospitals, Tuscaloosa, Ala.
- Searl, Wm., M.D., Medical Superintendent Fair Oaks Villa, Cuyahoga Falls, Ohio.
- Sefton, Frederick, M.D., The Pines, Auburn, N. Y.
- Semelaigne, René, M.D., Medecin en Chef Maison de Santé, Neuilly sur Seine, Paris, France. (*Honorary.*)
- Shanahan, Wm. T., M.D., Second Assistant Physician Craig Colony for Epileptics, Sonyea, N. Y. (*Associate.*)
- Sharp, Edward A., M.D., Physician-in-Charge Hillbourne Farms, Katonah, N. Y.
- Shepherd, Arthur F., M.D., Superintendent Dayton State Hospital, Dayton, Ohio.
- Shirres, David Alexander, M.D., Consulting Neurologist to the Protestant Hospital for the Insane, 670 Sherbrooke St., West, Montreal, Can. (*Associate.*)
- Simpson, J. C., M.D., 1728 15th St., N. W., Washington, D. C.
- Sinclair, Geo. L., M.D. (formerly Medical Superintendent Nova Scotia Hospital for the Insane), Provincial Inspector of Hospitals and Asylums, 25 Tobin St., Halifax, N. S.

- Skoog, A. L., M.D., Assistant Physician Parsons State Hospital for Epileptics, Parsons, Kans. (*Associate.*)
- Slocum, Clarence J., M.D., Resident Physician Dr. MacDonald's House, Pleasantville, Westchester Co., N. Y. (*Associate.*)
- Smith, Edwin Everett, M.D. (formerly Medical Director New Jersey State Hospital), Kensett, South Wilton, Conn.
- Smith, Geo. A., M.D., Medical Superintendent Central Islip State Hospital, Central Islip, L. I., N. Y.
- Smith, Gilbert T., M.D., Assistant Physician State Hospital for the Insane, Danville, Pa. (*Associate.*)
- Smith, S. E., M.D., Medical Superintendent Eastern Indiana Hospital for the Insane, Richmond, Ind.
- Smith, Stephen, M.D., 3 W. 92d St., New York, N. Y. (*Honorary.*)
- Somers, Elbert M., Jr., M.D., Assistant Physician St. Lawrence State Hospital, Ogdensburg, N. Y. (*Associate.*)
- Spellman, Dwight Seymour, M.D., Assistant Physician Manhattan State Hospital, Ward's Island, New York, N. Y. (*Associate.*)
- Spence, James Beveridge, M.D., R. U. I., M. Ch., Resident Physician and Superintendent Staffordshire County Asylum, Burntwood near Litchfield, England. (*Honorary.*)
- Sprague, Geo. P., M.D., Superintendent High Oaks Sanitarium, Lexington, Ky.
- Spratling, Wm. P., M.D., Superintendent Craig Colony for Epileptics, Sonyea, N. Y.
- Stack, M. J., M.D., Assistant Physician Government Hospital for the Insane, Washington, D. C. (*Associate.*)
- Stanley, Charles E., M.D., Assistant Physician Connecticut Hospital for the Insane, Middletown, Conn. (*Associate.*)
- Stearns, Wm. G., M.D., Medical Superintendent Oakwood and Lakeside Sanitarium, Lake Geneva, Wis.
- Stedman, Henry R., M.D., Bournewood Private Hospital for Nervous and Mental Diseases, South St., Brookline, Mass.
- Stevens, Frank T., M.D., Assistant Physician Mt. Pleasant State Hospital, Mt. Pleasant, Ia.
- Stewart, Nolan, M.D., Assistant Physician State Insane Hospital, Asylum, Miss.
- Stockton, Geo., M.D., Superintendent Columbus State Hospital, Columbus, Ohio.
- Stone, William A., M.D., Assistant Superintendent Michigan Asylum for the Insane, Kalamazoo, Mich.
- Stout, E. G., M.D., Assistant Physician Utica State Hospital, Utica, N. Y. (*Associate.*)
- Sweeney, Arthur, M.D., Professor of Medical Jurisprudence University of Minnesota; Neurologist to St. Joseph's, St. Lukes, and City and County Hospital, St. Paul, Minn.

- Swift, Henry M., M.D. (formerly Assistant Physician Danvers Insane Hospital), Hathorne, Mass. (*Associate.*)
- Taddiken, Paul Gerald, M.D., Assistant Physician Long Island State Hospital, Brooklyn, N. Y. (*Associate.*)
- Tamburini, A., M.D., Reggio-Emilia, Italy. (*Honorary.*)
- Taylor, Isaac M., M.D., Physician-in-Charge Broad Oaks Sanatorium, Morganton, N. C.
- Thompson, Charles E., M.D., Assistant Superintendent State Colony for Insane, Gardner, Mass.
- Thompson, J. L., M.D., Assistant Physician State Hospital for the Insane, Columbia, S. C. (*Associate.*)
- Thompson, Whitefield N., M.D., Medical Superintendent The Hartford Retreat, Hartford, Conn.
- Tobey, Henry A., M.D., Medical Superintendent Toledo State Hospital, Toledo, Ohio.
- Tomlinson, H. A., M.D., Medical Superintendent St. Peter State Hospital, St. Peter, Minn.
- Torney, Geo. H., Jr., M.D., Assistant Physician Utica State Hospital, Utica, N. Y.
- Toulouse, Édouard, M.D., Physician-in-Chief to Villejuif Asylum; Director Revue de Psychiatrie; Director of Laboratory of Experimental Psychology, l'École des Hautes Etudes, Paris; Villejuif (Seine), France. (*Honorary.*)
- Townsend, Theodore Irving, M.D., Assistant Physician Utica State Hospital, Utica, N. Y.
- Turner, John S., M.D., Superintendent North Texas Hospital for the Insane, Terrell, Tex.
- Tuttle, Geo. T., M.D., Medical Superintendent McLean Hospital, Waverley, Mass.
- Urquhart, Alexander R., M.D., F.R.C.P.E., Superintendent Royal Asylum, Perth, Scotland. (*Honorary.*)
- Van Deusen, Edwin H., M.D. (formerly Superintendent Michigan Asylum for the Insane), Kalamazoo, Mich.
- Villeneuve, George, M.D., Medical Superintendent Saint Jean de Dieu Hospital for the Insane, Longue Pointe, Que.
- Voight, Arno C., M.D., Hawley, Pa. (*Associate.*)
- Voldeng, M. Nelson, M.D., Superintendent Cherokee State Hospital, Cherokee, Ia.
- Wade, J. Percy, M.D., Medical Superintendent Maryland Hospital for the Insane, Catonsville, Md.
- Wagner, Charles G., M.D., Medical Superintendent Binghamton State Hospital, Binghamton, N. Y.
- Walker, Irving Lee, M.D., Assistant Physician Rochester State Hospital, Rochester, N. Y. (*Associate.*)
- Walker, Lewis M., M.D., Assistant Physician Medfield Insane Asylum, Harding, Mass. (*Associate.*)

- Wallace, D. R., M. D., Waco, Tex. (*Honorary.*)
- Ward, John W., M. D., Medical Director New Jersey State Hospital, Trenton, N. J.
- Weeks, Henry M., M. D., Medical Superintendent New Jersey State Village for Epileptics, Skillman, N. J.
- Welch, G. O., M. D., Medical Superintendent Fergus Falls State Hospital, Fergus Falls, Minn.
- Wentworth, Lowell F., M. D., Deputy Executive Officer State Board of Insanity, Boston, Mass.
- West, Calvin B., M. D., Assistant Physician Central Islip State Hospital, Central Islip, L. I., N. Y. (*Associate.*)
- Wherry, J. W., M. D., Medical Superintendent "Glenwood," Dansville, N. Y. (*Associate.*)
- White, Grace E., M. D., Assistant Physician Friends' Asylum, Frankford, Philadelphia, Pa. (*Associate.*)
- White, M. J., M. D., Medical Superintendent Milwaukee Hospital for the Insane, Wauwatosa, Wis.
- White, Whitman V., M. D., Consulting Physician Manhattan State Hospital, 2016 Fifth Ave., New York, N. Y.
- White, Wm. A., M. D., Superintendent Government Hospital for the Insane, Washington, D. C.
- Wilcox, Franklin S., M. D., First Assistant Physician, Fergus Falls State Hospital, Fergus Falls, Minn. (*Associate.*)
- Wilgus, Sidney D., M. D., Chairman New York State Board of Alienists, foot E. 116th Street, New York.
- Williams, Berthold A., M. D., Senior Resident Physician, Cincinnati Sanitarium, College Hill, Ohio.
- Williams, G. H., M. D., Assistant Physician Columbus State Hospital, Columbus, Ohio. (*Associate.*)
- Williamson, Alonzo P., M. D., Superintendent Southern California State Hospital, Patton, Cal.
- Wilsey, O. J., M. D., Physician-in-Charge Long Island Home, Amityville, N. Y.
- Wingate, Uranus O., M. D., Professor Nervous and Mental Diseases Wisconsin College of Physicians and Surgeons; Neurologist St. Mary's and Milwaukee County Hospitals; Consultant in Neurology to St. Joseph's Hospital; Honorary Member Medical and Surgical Staff Milwaukee Hospital for Chronic Insane; Physician-in-Chief Resthaven Sanatorium, Hotel Aberdeen, Grand Avenue, Milwaukee, Wis.
- Wise, Peter M., M. D., 502 W. 143d St., Washington Heights, New York. (*President, 1901.*)
- Witte, M. E., M. D., Medical Superintendent Clarinda State Hospital, Clarinda, Ia.
- Wolfe, Mary Moore, M. D., Resident Physician Department for Women Norristown State Hospital, Norristown, Pa.

- Woodbury, Chas. E., M. D., Medical Superintendent Foxboro State Hospital, Foxboro, Mass.
- Woodson, C. R., M. D., Medical Superintendent State Hospital No. 2, St. Joseph, Mo.
- Worcester, Samuel, M. D., Assistant Physician Stamford Hall, Stamford, Conn.
- Work, Hubert, M. D., Superintendent and Proprietor Woodcroft Hospital for Nervous Diseases, Pueblo, Col.
- Worsham, B. M., M. D., Superintendent State Hospital for the Insane, Austin, Tex.
- Wright, W. E., M. D., Assistant Physician Pennsylvania State Hospital, Harrisburg, Pa. (*Associate.*)
- Yellowlees, David, M. D., F. F. P. S., LL. D., Physician-Superintendent Glasgow Royal Asylum, Gartnavel, Glasgow, Scotland. (*Honorary.*)
- Young, David, M. D., Superintendent, Selkirk Asylum, Selkirk, Manitoba, Canada.
- Youngling, George S., M. D., Consulting Physician Central Islip State Hospital, 453 West 34th Street, New York City.
- Zeller, George A., M. D., Superintendent Illinois Asylum for Incurable Insane, 1201 So. Bartonville, Peoria, Ill.

GEOGRAPHICAL DISTRIBUTION
OF
MEMBERS AND INSTITUTIONS.

ALABAMA—THE ALABAMA INSANE HOSPITALS.

THE BRYCE HOSPITAL, TUSCALOOSA.

THE MT. VERNON HOSPITAL, MT. VERNON.

James T. Searcy, M. D., Superintendent.

Eugene D. Bondurant, M. D., 166 Conti St., Mobile.

ARIZONA—TERRITORIAL INSANE ASYLUM, PHOENIX.

ARKANSAS—STATE ASYLUM, LITTLE ROCK.

CALIFORNIA—STOCKTON STATE HOSPITAL, STOCKTON.

NAPA STATE HOSPITAL, NAPA.

AGNEWS STATE HOSPITAL, AGNEWS.

SOUTHERN CALIFORNIA STATE HOSPITAL, PATTON.

Alonzo P. Williamson, Superintendent.

Merritt B. Campbell, M. D., 1608 Orange St., Los Angeles.

James H. McBride, Pasadena.

MENDOCINO STATE HOSPITAL, TALMAGE.

COLORADO—COLORADO STATE INSANE ASYLUM, PUEBLO.

A. P. Busey, M. D., Superintendent.

WOODCROFT HOSPITAL, PUEBLO.

Hubert Work, M. D., Superintendent.

R. F. Darnall, Assistant Superintendent.

Arthur McGugan, M. D., Denver.

J. Elvin Courtney, M. D., Denver.

CONNECTICUT—THE HARTFORD RETREAT, HARTFORD.

Whitefield N. Thompson, Superintendent.

CONNECTICUT HOSPITAL FOR THE INSANE, MIDDLETOWN.

Henry S. Noble, M. D., Superintendent.
Charles E. Stanley, M. D., Assistant Physician.
Arthur B. Coleburn, M. D., Assistant Physician.
Allen R. Diefendorf, M. D., Pathologist.

STAMFORD HALL, STAMFORD.

Amos J. Givens, M. D., Superintendent.
Samuel Worcester, M. D., Assistant Physician.
Edwin Everett Smith, M. D., Kensett, South Wilton.
George H. Knight, M. D., Lakeville.

DELAWARE—DELAWARE STATE HOSPITAL, FARNHURST.

W. H. Hancker, M. D., Superintendent.

DISTRICT OF COLUMBIA—GOVERNMENT HOSPITAL FOR THE INSANE,
WASHINGTON.

William A. White, M. D., Superintendent.
M. J. Stack, M. D., Assistant Physician.
Benj. Rush Logie, M. D., Assistant Physician.
I. W. Blackburn, M. D., Pathologist.
J. C. Simpson, M. D., 1728 15th St., N. W., Washington.
Geo. T. Harding, Jr., M. D., Washington.

FLORIDA—ASYLUM FOR THE INDIGENT INSANE, CHATTAHOOCHEE.

GEORGIA—STATE SANITARIUM, MILLEDGEVILLE.

Theophilus O. Powell, M. D., Superintendent.
Edward M. Green, M. D., Assistant Physician.
Henry D. Allen, M. D., Invalids' Home, Milledgeville.
W. Herbert Adams, M. D., 102 Liberty St., East, Savannah.

IDAHO—IDAHO NORTHERN INSANE ASYLUM, OROFINO.

John W. Givens, M. D., Superintendent.

ILLINOIS—ILLINOIS CENTRAL HOSPITAL FOR THE INSANE, JACKSONVILLE.

Henry B. Carriel, M. D., Superintendent.

ILLINOIS NORTHERN HOSPITAL FOR THE INSANE, ELGIN.

ILLINOIS SOUTHERN HOSPITAL FOR THE INSANE, ANNA.

ILLINOIS EASTERN HOSPITAL FOR THE INSANE, HOSPITAL.

ILLINOIS WESTERN HOSPITAL FOR THE INSANE, WATERTOWN.

ILLINOIS HOSPITAL FOR INSANE CRIMINALS, MENARD.

ILLINOIS ASYLUM FOR THE INCURABLE INSANE, 1201 So. BARTONVILLE,
PEORIA.

Geo. A. Zeller, M. D., Superintendent.

COOK COUNTY HOSPITAL FOR THE INSANE, DUNNING.

Frederick H. Daniels, M. D., Bellevue Place, Batavia.

D. R. Brower, M. D., 34 and 36 Washington St., Chicago.

Sanger Brown, M. D., 100 State St., Chicago.

Henry F. Carriel, M. D., Jacksonville.

Frank P. Norbury, M. D., Jacksonville.

INDIANA—CENTRAL INDIANA HOSPITAL FOR THE INSANE, INDIANAPOLIS.

Geo. F. Edenharter, M. D., Superintendent.

EASTERN INDIANA HOSPITAL FOR THE INSANE, RICHMOND.

S. E. Smith, M. D., Superintendent.

NORTHERN INDIANA HOSPITAL FOR THE INSANE, LONGCLIFF, LOGANSPORT.

Joseph G. Rogers, M. D., Superintendent.

SOUTHERN INDIANA HOSPITAL FOR THE INSANE, EVANSVILLE.

Chas. E. Laughlin, M. D., Superintendent.

IOWA—MT. PLEASANT STATE HOSPITAL, MT. PLEASANT.

Chas. F. Applegate, M. D., Superintendent.

Frank T. Stevens, M. D., Assistant Physician.

Anne Burnet, M. D., Assistant Physician.

INDEPENDENCE STATE HOSPITAL, INDEPENDENCE.

W. P. Crumbacker, M. D., Superintendent.

CLARINDA STATE HOSPITAL, CLARINDA.

M. E. Witte, M. D., Superintendent.

CHEROKEE STATE HOSPITAL, CHEROKEE.

M. Nelson Voldeng, M. D., Superintendent.

MERCY HOSPITAL, DAVENPORT.

Gershom H. Hill, M. D., Equitable Bldg., Des Moines.

KANSAS—OSAWATOMIE STATE HOSPITAL, OSAWATOMIE.

TOPEKA STATE HOSPITAL, TOPEKA.

STATE HOSPITAL FOR EPILEPTICS, PARSONS.

M. L. Perry, M. D., Superintendent.

A. L. Skoog, M. D., Assistant Physician.

B. D. Eastman, M. D., Topeka.

KENTUCKY—EASTERN KENTUCKY ASYLUM FOR THE INSANE, LEXINGTON.

J. S. Redwine, M. D., Superintendent.

CENTRAL KENTUCKY ASYLUM FOR THE INSANE, LAKELAND.

WESTERN KENTUCKY ASYLUM FOR THE INSANE, HOPKINSVILLE.

George P. Sprague, M. D., Lexington.

LOUISIANA—LOUISIANA INSANE ASYLUM, JACKSON.

MAINE—MAINE INSANE HOSPITAL, AUGUSTA.

Bigelow T. Sanborn, M. D., Superintendent.
Horace B. Hill, M. D., Assistant Superintendent.

EASTERN MAINE INSANE HOSPITAL, BANGOR.

MARYLAND—MOUNT HOPE RETREAT, BALTIMORE.

Charles G. Hill, M. D., Attending Physician.

MARYLAND HOSPITAL FOR THE INSANE, CATONSVILLE.

J. Percy Wade, M. D., Superintendent.
R. Edward Garrett, Assistant Physician.

SPRINGFIELD STATE HOSPITAL, SYKESVILLE.

Joseph Clement Clark, M. D., Superintendent.

SHEPPARD AND ENOCH PRATT HOSPITAL, TOWSON.

Edward N. Brush, M. D., Physician-in-Chief and Superintendent.
W. R. Dunton, Jr., M. D., First Assistant Physician.

Chas. M. Franklin, M. D., Baltimore.

R. F. Gundry, M. D., Richard Gundry Home, Catonsville.

Henry M. Hurd, M. D., Superintendent Johns Hopkins Hospital,
Baltimore.

Henry J. Berkley, M. D., Baltimore.

A. T. Gundry, M. D., The Gundry Sanitarium, Catonsville.

Stewart Paton, M. D., Baltimore.

Jesse C. Coggins, M. D., Medical Director, The Laurel Sanitarium,
Laurel.

Cornelius De Weese, M. D., Medical Director The Laurel Sani-
tarium, Laurel.

MASSACHUSETTS—MCLEAN HOSPITAL, WAVERLEY.

Geo. T. Tuttle, M. D., Superintendent.
E. Stanley Abbot, M. D., Assistant Physician.
Emma W. Mooers, M. D., Assistant Physician.

BOSTON INSANE HOSPITAL.

William Noyes, M. D., Superintendent, Mattapan.
Geo. H. Maxfield, Assistant Physician Men's Department.

WORCESTER INSANE ASYLUM, WORCESTER.

Ernest V. Scribner, M. D., Superintendent.
P. Challis Bartlett, M. D., Assistant Physician.

WORCESTER INSANE HOSPITAL, WORCESTER.

Hosea M. Quinby, M. D., Superintendent.
Isador H. Coriat, M. D., Assistant Physician.
Theodore A. Hoch, M. D., Assistant Physician.
James A. Mackintosh, M. D., Assistant Physician.

DANVERS INSANE HOSPITAL, HATHORNE.

Chas. W. Page, M. D., Superintendent.
H. Walter Mitchell, M. D., Assistant Physician.
Harry A. Cotton, M. D., Assistant Physician.

TAUNTON INSANE HOSPITAL, TAUNTON.

John P. Brown, M. D., Superintendent.
Arthur V. Goss, M. D., Assistant Physician.
Harry William Miller, M. D., Pathologist.
Benjamin W. Baker, M. D., Assistant Physician.

NORTHAMPTON INSANE HOSPITAL, NORTHAMPTON.

John A. Houston, M. D., Superintendent.

MEDFIELD INSANE ASYLUM, HARDING.

Edward French, M. D., Superintendent.
Lewis M. Walker, M. D., Assistant Physician.

WESTBOROUGH INSANE HOSPITAL, WESTBOROUGH.

George S. Adams, M. D., Superintendent.
Henry I. Klopp, M. D., Assistant Physician.
Solomon C. Fuller, M. D., Assistant Physician.
Ida J. Brooks, M. D., Assistant Physician.
William W. Coles, M. D., Assistant Physician.

FOXBORO STATE HOSPITAL, FOXBORO.

Charles E. Woodbury, M. D., Superintendent.

STATE HOSPITAL, TEWKSBURY.

John H. Nichols, M. D., Superintendent.

CHANNING SANITARIUM, BROOKLINE.

Walter Channing, M. D., Superintendent.
W. M. Knowlton, M. D.

ASYLUM FOR INSANE CRIMINALS, STATE FARM.

C. A. Drew, M. D., Medical Director.

STATE COLONY FOR INSANE, GARDNER.

Joseph B. Howland, M. D., Superintendent.
Charles E. Thompson, M. D., Assistant Superintendent.

MASSACHUSETTS HOSPITAL FOR EPILEPTICS, PALMER.

Everett Flood, M. D., Superintendent.
T. W. Fisher, M. D., Boston.
George F. Jelly, M. D., 69 Newbury St., Boston.
Henry R. Stedman, M. D., South St., Brookline.
N. Emmons Paine, M. D., The Newton Sanatorium, West Newton
Alice Bennett, M. D., Wrentham.
G. H. M. Rowe, M. D., City Hospital, Boston.
Walter E. Fernald, M. D., Waverley.

Lowell F. Wentworth, M. D., State House, Boston.
 Clifford J. Huyck, M. D., Gilbertville.
 Henry M. Swift, M. D., Hathorne.
 Henry C. Baldwin, M. D., 126 Commonwealth Ave., Boston.
 J. L. Hildreth, M. D., 14 Garden St., Cambridge.
 Herbert B. Howard, M. D., Massachusetts General Hospital,
 Boston.
 Edward B. Lane, M. D., 419 Boylston St., Boston.
 Owen Copp, M. D., Boston.
 H. W. Page, M. D., Baldwinville.
 Emily Pagelson Howard, M. D., Boston.
 Edward B. Nims, M. D., Springfield.
 J. F. Edgerly, M. D., Newtonville.
 James B. Ayer, M. D., 518 Beacon St., Boston.
 Charles G. Dewey, M. D., 539 Talbot Ave., Dorchester.
 Arthur C. Jelly, M. D., 69 Newbury St., Boston.
 Edward Cowles, M. D., Warren Chambers, 419 Boylston St.,
 Boston.

MICHIGAN—MICHIGAN ASYLUM FOR THE INSANE, KALAMAZOO.

Alfred I. Noble, M. D., Superintendent.
 William A. Stone, M. D., Assistant Physician.
 Herman Ostrander, M. D., Assistant Physician.
 George F. Inch, M. D., Assistant Physician.

EASTERN MICHIGAN ASYLUM, PONTIAC.

E. A. Christian, M. D., Superintendent.
 Jason Morse, M. D., Assistant Superintendent.
 Irwin H. Neff, M. D., Assistant Physician.
 Homer E. Clark, M. D., Assistant Physician.

NORTHERN MICHIGAN ASYLUM, TRAVERSE CITY.

James D. Munson, M. D., Superintendent.

ASYLUM FOR DANGEROUS AND CRIMINAL INSANE, IONIA.

UPPER PENINSULA HOSPITAL FOR THE INSANE, NEWBERRY.

G. L. Chamberlain, M. D., Superintendent.

ST. JOSEPH'S RETREAT, DEARBORN.

J. E. Emerson, M. D., Attending Physician.

OAK GROVE HOSPITAL, FLINT.

C. B. Burr, M. D., Medical Director.
 Chas. B. Macartney, M. D., Assistant Physician.
 E. H. Van Deusen, M. D., Kalamazoo.
 Chas. W. Hitchcock, M. D., 270 Woodward Ave., Detroit.
 Walter P. Manton, M. D., 32 Adams Ave., West Detroit.
 Albert M. Barrett, M. D., Ann Arbor.
 Geo. M. Kline, M. D., Ann Arbor.

MINNESOTA—ST. PETER STATE HOSPITAL, ST. PETER.

H. A. Tomlinson, M. D., Superintendent.

W. H. Darling, M. D., Assistant Superintendent.

ROCHESTER STATE HOSPITAL, ROCHESTER.

Arthur F. Kilbourne, M. D., Superintendent.

SCHOOL FOR FEEBLE-MINDED AND COLONY FOR EPILEPTICS, FARIBAULT.

Arthur C. Rogers, M. D., Superintendent.

FERGUS FALLS STATE HOSPITAL, FERGUS FALLS.

G. O. Welch, M. D., Superintendent.

Franklin S. Wilcox, First Assistant Physician.

G. A. Chilgren, M. D., Sauk Rapids.

C. Eugene Riggs, M. D., St. Paul.

Arthur Sweeney, M. D., St. Paul.

MISSISSIPPI—STATE INSANE HOSPITAL, ASYLUM P. O.

Thomas J. Mitchell, M. D., Superintendent.

Nolan Stewart, M. D., Assistant Physician.

EAST MISSISSIPPI INSANE HOSPITAL, MERIDIAN.

J. M. Buchanan, M. D., Superintendent.

MISSOURI—ST. VINCENT INSTITUTION FOR THE INSANE, ST. LOUIS.

STATE HOSPITAL No. 1, FULTON.

STATE HOSPITAL No. 2, ST. JOSEPH.

C. R. Woodson, M. D., Superintendent.

STATE HOSPITAL No. 3, NEVADA.

STATE HOSPITAL No. 4, FARMINGTON.

COLONY FOR FEEBLE MINDED AND EPILEPTIC, MARSHALL.

CITY ASYLUM, ST. LOUIS.

Henry S. Atkins, M. D., Superintendent.

Charles H. Hughes, M. D., St. Louis.

Charles G. Chaddock, M. D., St. Louis.

George C. Crandall, M. D., St. Louis.

John Punton, M. D., Kansas City.

Frank R. Fry, M. D., St. Louis.

J. F. Robinson, M. D., Nevada, Mo.

Lemuel T. Hall, M. D., Farmington.

Frank L. Keith, M. D., Flat River.

NEBRASKA—NEBRASKA HOSPITAL FOR THE INSANE, LINCOLN.

ASYLUM FOR THE CHRONIC INSANE, HASTINGS.

NORFOLK HOSPITAL FOR THE INSANE, NORFOLK.

NEVADA—NEVADA HOSPITAL FOR MENTAL DISEASES, RENO.

NEW HAMPSHIRE—NEW HAMPSHIRE STATE HOSPITAL, CONCORD.

Charles P. Bancroft, M. D., Superintendent.
 Frederick L. Hills, M. D., Assistant Superintendent.
 Harold C. Goodwin, M. D., Assistant Physician.

HIGHLAND SPRING SANATORIUM, NASHUA.

Albert Edward Brownrigg, M. D., Superintendent.

NEW JERSEY—NEW JERSEY STATE HOSPITAL, MORRIS PLAINS.

B. D. Evans, M. D., Medical Director.
 Peter S. Mallon, M. D., Assistant Physician.
 Christopher C. Beling, M. D., Assistant Physician.
 H. Austin Cossitt, M. D., Second Assistant Physician and Pathologist.

NEW JERSEY STATE HOSPITAL, TRENTON.

John W. Ward, M. D., Medical Director.
 John C. Felty, M. D., Assistant Physician.
 Paul Lange Cort, M. D., Assistant Physician.
 Charles Lewis Allen, M. D., Pathologist and Assistant Physician.

NEW JERSEY STATE VILLAGE FOR EPILEPTICS, SKILLMAN.

Henry M. Weeks, M. D., Superintendent.
 L. S. Hinckley, M. D., Newark.
 Eliot Gorton, M. D., Summit.
 D. M. Dill, M. D., Newark.
 Thomas P. Prout, M. D., Summit.
 Raymond D. Baker, M. D., Morris Plains.

NEW YORK—BLOOMINGDALE ASYLUM, WHITE PLAINS.

Samuel B. Lyon, M. D., Superintendent.
 August Hoch, M. D., First Assistant Physician.
 Albert Durham, M. D., Assistant Physician.

MANHATTAN STATE HOSPITAL, WARD'S ISLAND, NEW YORK CITY.

William Mabon, M. D., Superintendent and Medical Director.
 John T. W. Rowe, M. D., First Assistant Physician.
 Louis C. Pettit, M. D., Second Assistant Physician.
 Dwight S. Spellman, M. D., Assistant Physician.
 John Rudolph Knapp, M. D., Assistant Physician.
 Frank H. Magness, M. D., Assistant Physician.
 Clarence F. Haviland, M. D., Assistant Physician.
 Anna E. Hutchinson, M. D., Woman Assistant Physician.
 Morris J. Karpas, M. D., Assistant Physician.

CENTRAL ISLIP STATE HOSPITAL, CENTRAL ISLIP, L. I.

George A. Smith, M. D., Superintendent.

Marcus B. Heyman, M. D., First Assistant Physician.

Calvin B. West, M. D., Assistant Physician.

LONG ISLAND STATE HOSPITAL, BROOKLYN.

O. M. Dewing, M. D., Superintendent.

Paul G. Taddiken, M. D., Assistant Physician.

KINGS PARK STATE HOSPITAL, KINGS PARK.

William Austin Macy, M. D., Superintendent.

De Witt C. MacClymont, M. D., Assistant Physician.

John Irvine McKelway, M. D., Assistant Physician.

George O'Hanlon, M. D., Assistant Physician.

HUDSON RIVER STATE HOSPITAL, POUGHKEEPSIE.

Isham G. Harris, M. D., Acting Superintendent.

Frederick W. Parsons, M. D., Second Assistant Physician.

MARSHALL SANITARIUM, TROY.

Hiram Elliott, M. D., Superintendent.

UTICA STATE HOSPITAL, UTICA.

Harold L. Palmer, M. D., Superintendent.

E. G. Stout, M. D., Assistant Physician.

George H. Torney, Jr., M. D., Assistant Physician.

Theodore I. Townsend, M. D., Assistant Physician.

BINGHAMTON STATE HOSPITAL, BINGHAMTON.

Charles G. Wagner, M. D., Superintendent.

ST. LAWRENCE STATE HOSPITAL, OGDENSBURG.

R. H. Hutchings, M. D., Superintendent.

Caroline S. Pease, M. D., Assistant Physician.

Elbert M. Somers, Jr., M. D., Assistant Physician.

Roy L. Leak, M. D., Assistant Physician.

Walter G. Ryon, M. D., Assistant Physician.

Charles M. Burdick, M. D., Assistant Physician.

Ethan A. Nevin, M. D., Assistant Physician.

MATTEAWAN STATE HOSPITAL, FISHKILL LANDING.

Robert B. Lamb, M. D., Superintendent.

BRIGHAM HALL, CANANDAIGUA.

D. R. Burrell, M. D., Resident Physician.

WILLARD STATE HOSPITAL, WILLARD.

Robert M. Elliott, M. D., Superintendent.

Chester Lee Carlisle, M. D., Assistant Physician.

Erving Holley, M. D., Assistant Physician.

Robert E. Doran, M. D., Assistant Physician.

Wm. H. Montgomery, M. D., Assistant Physician.

ROCHESTER STATE HOSPITAL, ROCHESTER.

Eugene H. Howard, M. D., Superintendent.
 Eveline P. Ballantine, M. D., Assistant Physician.
 Ezra B. Potter, M. D., Assistant Physician.
 Charles T. LaMoure, M. D., Assistant Physician.
 Irving Lee Walker, M. D., Assistant Physician.
 Edward L. Hanes, M. D., Assistant Physician.

BUFFALO STATE HOSPITAL, BUFFALO.

Arthur W. Hurd, M. D., Superintendent.
 Henry P. Frost, M. D., First Assistant Physician.
 Helene J. C. Kuhlman, M. D., Assistant Physician.
 George G. Armstrong, M. D., Assistant Physician.
 B. Ross Nairn, M. D., Assistant Physician.
 Joseph B. Betts, M. D., Assistant Physician.

MIDDLETOWN STATE HOMEOPATHIC HOSPITAL, MIDDLETOWN.

Maurice C. Ashley, M. D., Superintendent.

GOWANDA STATE HOMEOPATHIC HOSPITAL, GOWANDA.

Daniel H. Arthur, M. D., Superintendent.

DANNEMORA STATE HOSPITAL, DANNEMORA.

Charles H. North, M. D., Superintendent.

KINGS COUNTY HOSPITAL, BROOKLYN.

John F. Fitzgerald, M. D., General Medical Superintendent.
 Wm. B. Moseley, M. D., Assistant Physician.

STATE CUSTODIAL ASYLUM, ROME.

CRAIG COLONY FOR EPILEPTICS, SONYEA.

Wm. P. Spratling, M. D., Superintendent.
 Wm. T. Shanahan, M. D., Assistant Physician.
 Daniel A. Harrison, M. D., Breezehurst Terrace, Whitestone, L. I.
 Peter M. Wise, M. D., 502 W. 143d St., Washington Heights,
 New York.
 Carlos F. MacDonald, M. D., 70 W. 46th St., New York.
 Ralph L. Parsons, M. D., Greenmont-on-Hudson, Ossining P. O.
 O. J. Wilsey, M. D., Long Island Home, Amityville.
 Frederick Sefton, M. D., The Pines, Auburn.
 William D. Granger, M. D., Vernon House, Bronxville.
 Frederick Peterson, M. D., 4 W. Fiftieth St., New York.
 Clarence J. Slocum, M. D., Pleasantville, Westchester Co.
 Sidney D. Wilgus, M. D., New York.
 B. Sachs, M. D., 21 E. Sixty-fifth St., New York.
 H. Ernest Schmid, M. D., White Plains.
 Theo. H. Kellogg, M. D., Riverdale, New York.
 J. M. Mosher, M. D., 170 Washington Ave., Albany.

- J. Joseph Kindred, M. D., River-Crest Sanitarium, Astoria, L. I.
 Willett S. Brown, M. D., Sanford Hall, Flushing.
 Austin Flint, M. D., 118 E. 19th St., New York.
 Walter R. Gillette, M. D., 24 W. Fortieth St., New York.
 Flavius Packer, M. D., The Knolls, 261st Street and Broadway,
 New York City.
 Arthur H. Harrington, M. D., 224 2d Ave., New York.
 Whitman V. White, M. D., 2016 Fifth Ave., New York.
 William Hirsch, M. D., 52 E. Sixty-fourth St., New York.
 Frank W. Robertson, M. D., 411 West End Ave., New York.
 Adolf Meyer, M. D., Ward's Island.
 George B. Campbell, M. D., 78 Irving Place, New York.
 Emma Putnam, M. D., Poughkeepsie.
 L. Pierce Clark, M. D., 23 West 58th Street, New York.
 Geo. S. Youngling, M. D., 453 West 34th Street, New York.
 Chas. E. Atwood, M. D., Vanderbilt Clinic, New York.
 Arthur C. Delacroix, M. D., Brooklyn.
 Edward A. Sharp, M. D., Physician-in-Charge Hillbourne Farms,
 Katonah.
 Percy Bryant, M. D., 134 Hawthorne St., Brooklyn.
 Chas. W. Pilgrim, M. D., President State Commission in Lunacy,
 Poughkeepsie.
 A. E. Macdonald, M. D., Columbia Court, 431 Riverside Ave.,
 cor. 115th St., New York.
 Wm. L. Russell, M. D., Poughkeepsie.
 H. L. Barnes, M. D., Contagious Hospital, Kingston Ave., Brook-
 lyn.
 Wm. E. Dold, M. D., Falkirk, Central Valley.
 J. W. Wherry, M. D., Medical Superintendent "Glenwood," Dans-
 ville.
 James R. Bolton, M. D., Physician-in-Charge, "Riverview," Fish-
 kill-on-Hudson.
 Fred B. Colby, M. D., Highland Falls.

NORTH CAROLINA—STATE HOSPITAL, RALEIGH.

James McKee, M. D., Superintendent.

STATE HOSPITAL, MORGANTON.

P. L. Murphy, M. D., Superintendent.

STATE HOSPITAL, GOLDSBORO.

Isaac M. Taylor, M. D., Morganton.

NORTH DAKOTA—STATE HOSPITAL FOR THE INSANE OF NORTH DAKOTA, JAMESTOWN.

Dwight S. Moore, M. D., Superintendent.

OHIO—LONGVIEW HOSPITAL, CARTHAGE.

F. W. Harmon, M. D., Superintendent.

DAYTON STATE HOSPITAL, DAYTON.

Arthur F. Shepherd, M. D., Superintendent.

COLUMBUS STATE HOSPITAL, COLUMBUS.

Geo. Stockton, M. D., Superintendent.

G. H. Williams, M. D., Assistant Physician.

Isabel A. Bradley, M. D., Pathologist.

ATHENS STATE HOSPITAL, ATHENS.

CLEVELAND STATE HOSPITAL, CLEVELAND.

A. B. Howard, M. D., Superintendent.

James F. Kelly, M. D., Assistant Physician.

TOLEDO STATE HOSPITAL, TOLEDO.

H. A. Tobey, M. D., Superintendent.

MASSILLON STATE HOSPITAL, MASSILLON.

H. C. Eyman, M. D., Superintendent.

Caroline Colver, M. D., Assistant Physician.

Edson C. Brown, M. D., Assistant Physician.

Jas. M. McGeorge, M. D., Assistant Physician.

John D. O'Brien, M. D., Assistant Physician.

George F. Cook, M. D., Oxford Retreat, Oxford.

R. Harvey Cook, M. D., Oxford Retreat, Oxford.

Wm. Searl, M. D., Fair Oaks, Cuyahoga Falls.

J. M. Lewis, M. D., Cleveland.

J. M. Ratliff, M. D., Dayton.

F. W. Langdon, M. D., 5 Garfield Place, Cincinnati.

Berthold A. Williams, M. D., Cincinnati Sanitarium, College Hill.

OREGON—OREGON STATE INSANE ASYLUM, SALEM.

Henry Waldo Coe, M. D., Medical Director Crystal Springs, Portland.

PENNSYLVANIA—PENNSYLVANIA HOSPITAL FOR THE INSANE, PHIL'A.

John B. Chapin, M. D., Superintendent.

A. R. Moulton, M. D., Senior Assistant Physician.

Henry B. Nunemaker, M. D., Assistant Physician.

FRIENDS' ASYLUM FOR THE INSANE, FRANKFORD, PHILADELPHIA.

Robert H. Chase, M. D., Superintendent.

Seymour DeWitt Ludlum, M. D., Assistant Physician.

Grace E. White, M. D., Assistant Physician.

PHILADELPHIA HOSPITAL. INSANE DEPARTMENT. PHILADELPHIA.

Wm. W. Richardson, M. D., Assistant Physician.

STATE HOSPITAL FOR THE INSANE, NORRISTOWN.

Mary Moore Wolfe, M. D., Resident Physician Department for Women.

Mary Christiancy, M. D., Assistant Physician.

PENNSYLVANIA STATE HOSPITAL, HARRISBURG.

H. L. Orth, M. D., Superintendent.

W. E. Wright, M. D., Assistant Physician.

STATE HOSPITAL FOR THE INSANE, WARREN.

Morris S. Guth, M. D., Superintendent.

STATE HOSPITAL FOR THE INSANE, DANVILLE.

Hugh B. Meredith, M. D., Superintendent.

Gilbert T. Smith, M. D., Assistant Physician.

WESTERN PENNSYLVANIA HOSPITAL FOR THE INSANE, DIXMONT.

Henry A. Hutchinson, M. D., Superintendent.

PENNSYLVANIA EPILEPTIC HOSPITAL AND COLONY FARM, OAKBOURNE.

PENNSYLVANIA TRAINING SCHOOL FOR FEEBLE MINDED, ELWYN.

ASYLUM FOR THE CHRONIC INSANE, WERNERSVILLE.

S. S. Hill, M. D., Superintendent.

HOSPITAL FOR THE INSANE OF LUZERNE COUNTY, RETREAT.

Charles B. Mayberry, M. D., Superintendent.

Harris May Carey, M. D., Assistant Physician.

Charles K. Mills, M. D., 1909 Chestnut St., Philadelphia.

Jane Rogers Baker, M. D., Embreeville.

C. Spencer Kinney, M. D., Easton.

Edward E. Mayer, M. D., Pittsburgh.

Augustus A. Eshner, M. D., 1019 Spruce St., Philadelphia.

Arno C. Voigt, M. D., Hawley.

RHODE ISLAND—BUTLER HOSPITAL, PROVIDENCE.

G. Alder Blumer, M. D., Superintendent.

Henry C. Hall, M. D., Assistant Physician.

Wm. McDonald, M. D., Assistant Physician.

STATE HOSPITAL FOR THE INSANE, CRANSTON (HOWARD P. O.).

SOUTH CAROLINA—STATE HOSPITAL FOR THE INSANE, COLUMBIA.

J. W. Babcock, M. D., Superintendent.

J. L. Thompson, M. D., Assistant Physician.

SOUTH DAKOTA—SOUTH DAKOTA HOSPITAL FOR THE INSANE, YANKTON.

L. C. Mead, M. D., Superintendent.

George Sheldon Adams, M. D., Assistant Superintendent.

TENNESSEE—CENTRAL HOSPITAL FOR THE INSANE, NASHVILLE.

John A. Beauchamp, M. D., Superintendent.

Albert E. Douglas, M. D., Assistant Physician.

EASTERN HOSPITAL FOR THE INSANE, KNOXVILLE.

Michael Campbell, M. D., Superintendent.

WESTERN HOSPITAL FOR THE INSANE, BOLIVAR.

William A. Cheatham, M. D., Nashville.

E. H. Pomeroy, M. D., Monterey.

TEXAS—HOSPITAL FOR THE INSANE, AUSTIN.

B. M. Worsham, M. D., Superintendent.

NORTH TEXAS HOSPITAL FOR THE INSANE, TERRELL.

John S. Turner, M. D., Superintendent.

SOUTHWESTERN INSANE ASYLUM, SAN ANTONIO.

T. O. Maxwell, M. D., Superintendent.

Wilmer L. Allison, Assistant Superintendent.

STATE EPILEPTIC COLONY, ABILENE.

John Preston, M. D., Superintendent.

Marvin L. Graves, M. D., Galveston.

G. H. Moody, M. D., San Antonio.

UTAH—UTAH STATE MENTAL HOSPITAL, PROVO CITY.

Daniel H. Calder, M. D., Superintendent.

VERMONT—BRATTLEBORO RETREAT, BRATTLEBORO.

Shailer E. Lawton, M. D., Superintendent.

VERMONT STATE HOSPITAL FOR THE INSANE, WATERBURY.

M. Hutchinson, M. D., Waterbury.

Clayton G. Andrews, M. D., Burlington.

VIRGINIA—EASTERN STATE HOSPITAL, WILLIAMSBURG.

L. S. Foster, M. D., Superintendent.

CENTRAL STATE HOSPITAL, PETERSBURG.

William F. Drewry, M. D., Superintendent.

WESTERN STATE HOSPITAL, STAUNTON.

J. H. Garlick, M. D., Assistant Physician.

SOUTHWESTERN STATE HOSPITAL, MARION.

R. J. Preston, M. D., Superintendent.

WASHINGTON—WESTERN WASHINGTON HOSPITAL FOR THE INSANE,
FORT STEILACOOM.

EASTERN WASHINGTON HOSPITAL FOR THE INSANE. MEDICAL LAKE.

WEST VIRGINIA—WEST VIRGINIA HOSPITAL FOR THE INSANE AT WESTON, WESTON.

WEST VIRGINIA HOSPITAL FOR THE INSANE AT SPENCER, SPENCER.

A. J. Lyons, M. D., Superintendent.

WEST VIRGINIA ASYLUM AT HUNTINGTON, HUNTINGTON.

L. V. Guthrie, M. D., Superintendent.

A. H. Kunst, M. D., Weston.

WISCONSIN—WISCONSIN STATE HOSPITAL FOR THE INSANE, MENDOTA.

Charles Gorst, M. D., Superintendent.

NORTHERN HOSPITAL FOR THE INSANE, WINNEBAGO.

W. A. Gordon, M. D., Superintendent.

MILWAUKEE HOSPITAL FOR THE INSANE, WAUWATOSA.

M. J. White, M. D., Superintendent.

ASYLUM FOR THE CHRONIC INSANE, WAUWATOSA.

William F. Beutler, M. D., Superintendent.

MILWAUKEE SANITARIUM, WAUWATOSA.

Richard Dewey, M. D., Physician-in-Charge.

John B. Edwards, M. D., Mauston.

William F. Becker, M. D., 604 Goldsmith Bldg., Milwaukee.

Byron M. Caples, M. D., Waukesha Springs.

Uranus O. B. Wingate, M. D., Milwaukee.

Wm. G. Stearns, M. D., Lake Geneva.

E. L. Bullard, M. D., 402 Camp Bldg., Milwaukee.

WYOMING—STATE HOSPITAL FOR THE INSANE, EVANSTON.

PUERTO RICO—INSANE ASYLUM, SAN JUAN.

BRITISH AMERICA.

ONTARIO—ASYLUM FOR THE INSANE, TORONTO.

Charles K. Clarke, M. D., Superintendent.

ASYLUM FOR THE INSANE, LONDON.

G. A. MacCallum, M. D., Superintendent.

H. E. Buchan, M. D., Assistant Superintendent.

ROCKWOOD HOSPITAL FOR THE INSANE, KINGSTON.

ASYLUM FOR THE INSANE, HAMILTON.

James Russell, M. D., Superintendent.

ASYLUM FOR THE INSANE, MIMICO, TORONTO.

Nelson H. Beemer, M. D., Superintendent.

ASYLUM FOR THE INSANE, BROCKVILLE.

Thomas J. Moher, Superintendent.

ASYLUM FOR THE INSANE, COBOURG.

HOMEWOOD SANITARIUM, GUELPH.

Alfred T. Hobbs, M. D., Superintendent.

Eugene C. McNicholl, M. D., Cobourg.

QUEBEC—PROTESTANT HOSPITAL FOR THE INSANE, MONTREAL.

T. J. W. Burgess, M. D., Superintendent.

Carlyle A. Porteous, M. D., Assistant Superintendent.

Andrew Macphail, M. D., Pathologist.

SAINT JEAN DE DIEU HOSPITAL FOR THE INSANE, LONGUE POINTE.

George Villeneuve, M. D., Superintendent.

E. Philippe Chagnon, M. D., Montreal.

David Alexander Shirres, M. D., 670 Sherbrooke St., West,
Montreal.

QUEBEC ASYLUM FOR THE INSANE, QUEBEC.

BEAUPORT ASYLUM, BEAUPORT.

M. D. Brochu, M. D., Superintendent.

NOVA SCOTIA—NOVA SCOTIA HOSPITAL FOR THE INSANE, HALIFAX.

W. H. Hattie, M. D., Superintendent.

Geo. L. Sinclair, M. D., Halifax.

NEW BRUNSWICK—PROVINCIAL HOSPITAL, ST. JOHN.

James V. Anglin, M. D., Superintendent.

PRINCE EDWARD ISLAND—HOSPITAL FOR INSANE, CHARLOTTETOWN.

V. L. Goodwill, M. D., Medical Superintendent.

NEWFOUNDLAND—ASYLUM FOR THE INSANE, ST. JOHN'S.

BRITISH COLUMBIA—PUBLIC HOSPITAL FOR INSANE, NEW WEST-
MINSTER.

G. H. Manchester, M. D., New Westminster.

MANITOBA—SELKIRK ASYLUM, SELKIRK.

David Young, M. D., Superintendent.

HONORARY MEMBERS.

- T. S. Clouston, M. D., F. R. C. P., F. R. S. E., Edinburgh, Scotland.
David Yellowlees, M. D., F. F. P. S., LL. D., Glasgow, Scotland.
A. Motet, M. D., Paris, France.
A. Tamburini, M. D., Reggio-Emilia, Italy.
Stephen Smith, M. D., New York, N. Y.
G. Stanley Hall, Ph. D., LL. D., Worcester, Mass.
Charles F. Folsom, M. D., Boston, Mass.
James Rutherford, M. D., F. R. C. P., F. F. P. S., Dumfries, Scotland.
S. Weir Mitchell, M. D., Philadelphia, Pa.
Victor Parant, M. D., Toulouse, France.
Jules Morel, M. D., Mons, Belgium.
Emmanuel Régis, M. D., Bordeaux, France.
René Semelaigne, M. D., Paris, France.
James M. Buckley, D. D., LL. D., Morristown, N. J.
Henry Hun, M. D., Albany, N. Y.
James Beveridge Spence, M. D., R. U. I. M. Ch., Burntwood, England.
Antoine Ritti, M. D., Charenton, près Paris, France.
Alexander R. Urquhart, M. D., F. R. C. P. E., Perth, Scotland.
William Pryor Letchworth, LL. D., Glen Iris, Portage, N. Y.
Édouard Toulouse, M. D., Villejuif, France.
Wesley Mills, A. M., M. D., Montreal, Que.
D. R. Wallace, M. D., Waco, Texas.
Henry M. Bannister, M. D., Evanston, Ill.
Daniel Clark, M. D., Toronto, Ontario.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

CONSTITUTION.

ARTICLE I.

This organization shall be known as the AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION, this name being adopted in 1892 by "The Association of Medical Superintendents of American Institutions for the Insane," founded in 1844.

ARTICLE II.

The object of this Association shall be the study of all subjects pertaining to mental disease, including the care, treatment, and promotion of the best interests of the insane.

ARTICLE III.

There shall be four classes of members: (1) Active members, who shall be physicians, resident in the United States and British America, especially interested in the treatment of insanity; (2) Associate members; (3) Honorary members; and (4) Corresponding members.

ARTICLE IV.

The officers of the Association shall consist of a President, Vice-President, Secretary—who shall also be the Treasurer—two Auditors, and twelve other members of the Association to be called Councilors; all of these officers together shall constitute a body which shall be known as the Council.

NOTE.—The Association of Medical Superintendents of American Institutions for the Insane was founded in 1844 by the original thirteen members. In 1891, when its membership had increased to more than two hundred, it was proposed, at the annual meeting of that year in Washington, to form a better organization of the Association—its work having previously been done under the somewhat unstable rules of custom and a few resolutions scattered through its records. The proposition was agreed to, and at the annual meeting in Washington, in 1892 there was unanimously adopted the following Constitution and By-Laws, with the change of name to the AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

ARTICLE V.

The Active members of the Association shall include all past and present medical superintendents named in the official list published for 1892 of members of "The Association of Medical Superintendents of American Institutions for the Insane"; the Honorary members shall include those so designated in that list; the Associate members shall include all the assistant physicians named in the same list; it being provided that said list shall be corrected by the Council, as may be necessary to carry out the intention of the Constitution as to the continuance of existing membership.

Every candidate for admission to the Association hereafter as an Active member shall be proposed to the Council, in writing, in an application addressed to the President, at any annual meeting preceding the one at which the election is held. Honorary, Associate, or Corresponding members shall be proposed to the Council, in writing, in an application addressed to the President, at least two months prior to the meeting of the Association. Every application of whatever class must include a statement of the candidate's name and residence, professional qualifications, and any appointments then or formerly held, and certifying that he is a fit and proper person for membership. In the case of a candidate for Active or Associate membership, the application shall be signed by three Active members of the Association; and by six Active members for the proposal of an Honorary or Corresponding member. The names of all candidates approved by a majority vote of members of the Council present at its annual meeting shall be presented on a written or printed ballot to the Association at its concurrent annual meeting, at least one session previous to that at which the election is made, which shall be by ballot at a regular session, and require a majority vote of the members present. Physicians who, by their professional work or published writings, have shown a special interest in the care and welfare of the insane, are eligible to Active membership. The only persons eligible for Associate membership are regularly appointed assistant physicians of institutions for the insane that are regarded to be properly such by the Council; and they are eligible for such membership only during the time they are hold-

ing such appointments. After holding such an appointment three years, an Associate member may become an Active member by making application, in writing, to the Council, and upon its approval, being elected in the manner heretofore prescribed.

ARTICLE VI.

Physicians and others who have distinguished themselves by their attainments in branches of science connected with insanity, or who have rendered signal service in philanthropic efforts to promote the interests of the insane, shall be eligible for Honorary membership.

Physicians not residents in the United States and British America, who are actively engaged in the treatment of insanity, may be elected Corresponding members.

Active members only shall be entitled to a vote at any meeting, or be eligible to any office. Honorary and Corresponding members shall be exempt from all payments to the Association.

ARTICLE VII.

Any member of the Association may withdraw from it on signifying his desire to do so in writing to the Secretary: *Provided*, That he shall have paid all his dues to the Association. Any member who shall fail for three successive years to pay his dues after special notice by the Treasurer shall be regarded as having resigned his membership, unless such dues shall have been remitted by the Council for good and sufficient reasons.

And member who shall be declared unfit for membership by a two-thirds vote of the members of the Council present at an annual meeting of that body shall have his name presented by it for the action of the Association from which he shall be dismissed if it be so voted by two-thirds of the members present at its annual meeting.

ARTICLE VIII.

The Officers and Councilors shall be elected at each annual meeting. They shall be nominated to the Association on the second day of the annual meeting in the order of business of the first session of that day, by a committee appointed for that purpose by the President; and the election shall take place immedi-

ately. The election shall be made as the meeting may determine, and the person who shall have received the highest number of votes shall be declared elected to the office for which he has been nominated.

The President, Vice-President, the Secretary and Treasurer, and Auditors shall hold office for one year or until the beginning of the term for which their successors are elected. The Secretary and Treasurer and one Auditor are eligible for re-election. At the first election of Councilors, four members shall be elected for one year, four for two years, and four for three years; and thereafter four members shall be elected each year to hold office three years, or until their successors are elected. The President, Vice-President, one Auditor, and the four retiring Councilors are ineligible for re-election to their respective offices for one year immediately following their retirement. All the Officers and Councilors shall enter upon their duties immediately after their election, excepting the President and Vice-President. When any vacancies occur in any of the offices of the Association, they shall be filled by the Council until the next annual meeting.

A quorum of the Council shall be formed by six members; and of the Association by twenty Active members.

ARTICLE IX.

The President and Vice-President for the year shall enter on their duties at the close of the business of the annual meeting at which they are elected. The President shall prepare an inaugural address to be delivered at the opening session of the meeting. He shall preside at all the annual or special meetings of the Association or Council, or in his absence at any time, the Vice-President shall act in his place.

The Secretary and Treasurer shall keep the records of the Association and perform all the duties usually pertaining to that office, and such other duties as may be prescribed for him by the Council; and under the same authority he shall receive and disburse and duly account for all sums of money belonging to the Association. He shall keep accurate accounts and vouchers of all his receipts and payments on behalf of the Association, and of all invested funds, with the income and disposition thereof, that

may be placed in his keeping, and shall submit these accounts, with a financial report for the preceding year, to the Council at its annual meeting. Each annual statement shall be examined by the Auditors, who shall prepare and present at each annual meeting of the Association a report showing its financial condition. The Council shall have charge of any funds in the possession of the Association, and which shall be invested under its direction and control. The Council shall keep a careful record of its proceedings, and make an annual report to the Association of matters of general interest. The Council shall also print annually the proceedings of the meetings of the Association and the reports of the Treasurer and Auditors.

The Council is empowered to manage all the affairs of the Association, subject to the Constitution and By-Laws; to appoint committees from the membership of the Association, and spend money out of its surplus funds for special scientific investigations in matters pertaining to the objects of the Association, to publish reports of such scientific investigations; to apply the income of special funds, at its discretion, to the purposes for which they were intended. The Council may also engage in the regular publication of reports, papers, transactions, and other matters, in annual volume, or in a journal, in such manner and at such times as the Council may determine, with the approval of the Association.

ARTICLE X.

Amendments to the Constitution and By-Laws shall be taken up for consideration at the first session of the second day of any annual meeting, and may be made by a two-thirds vote of all the members present: *Provided*, That notice of such proposed amendments be given in writing at the annual meeting next preceding. It shall be the duty of the Secretary to send to all the members a copy of any proposed amendment at least three months previous to the meeting when the action is to be taken.

BY-LAWS.

ARTICLE I.

The meetings of the Association shall be held annually. The time and place of each meeting shall be named by the Council, and reported to the Association for its action at the preceding meeting. Each annual meeting shall be called by printed announcements sent to each member at least three months previous to the meeting.

The Council shall hold an annual meeting concurrent with the annual meeting of the Association; and the Council shall hold as many sessions and at such times as the business of the Association may require.

Special meetings of the Council may be called by the order of the Council. The President shall have authority at any time, at his own discretion, to instruct the Secretary to call a special meeting of the Council; and he shall be required to do so upon a request signed by six members of the Council. Such special meetings shall be called by giving at least four weeks' written notice.

ARTICLE II.

Each and every Active and Associate member shall pay an annual tax to the Treasurer, the amount to be fixed annually by the Council, not to exceed five dollars for an Active member, or two dollars for an Associate member.

ARTICLE III.

The order of business of each annual meeting of the Association shall be determined by the Council, and shall be printed for the use of the Association at its meeting. The Council shall also make all arrangements for the meetings of the Association, appointing such auxiliary committees from its own body, or from other members of the Association, and making such other provisions as shall be requisite, at its discretion.

NOTE.

The accompanying volume, containing the proceedings, papers, and discussions of the American Medico-Psychological Association at its Sixty-second Annual Meeting, is printed by the Council with the approval of the Association.

CHARLES W. PILGRIM,

Secretary.

POUGHKEEPSIE, N. Y.,
October 1, 1906.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

PROCEEDINGS OF THE SIXTY-SECOND ANNUAL MEETING.

TUESDAY, JUNE 12, 1906.—FIRST SESSION.

The Association convened at 10 a. m. in the Convention Hall of the Hotel Vendome, Boston, Mass., and was called to order by the President, Dr. C. B. Burr, of Flint, Michigan.

The President introduced Dr. George T. Tuttle, Chairman of the Committee of Arrangements, who said: "It is ten years since this Association met at Boston,—not a long time to look back upon, but long enough for many changes. There has been a steady improvement in the care and treatment of the insane during this period. We in Massachusetts have witnessed the transfer of the insane from almshouses to hospitals under State care. In these hospitals have been established reception wards and infirmary wards, and improvement in the nursing service throughout the country by the establishment of training schools has been very marked. As some of you know, I have been making inquiries concerning the male nurse, and incidentally, I have learned that in at least thirty-seven hospitals of the country, training schools for nurses have been established in the last ten years.

"Aside from this work, there has been a great increase in interest in the study of psychiatry during this period, as is witnessed by the establishment of laboratories of pathological, chemical, physiological, and psychological research, since, from the difficulty of our subject, the problem of psychiatry needs to be attacked from all sides. The establishment of these laboratories has necessitated the employment of a number of men who are fitted by previous training for research work, which means an increase of hospital staffs throughout the country.

"With the increase in knowledge of mental diseases has come better instruction for the medical student. In my day, psychiatry could scarcely be studied as a subject by itself. At the present

time, the student of the Harvard Medical School not only has a good course of lectures on the subject of insanity, but has valuable clinical experience which was not possible twenty years ago. This matter of teaching students psychiatry receives a fresh impetus by the departure of the University of Michigan, which has recently established a psychopathic clinic,—the first, so far as I know, among English-speaking people.

“ Besides this, there is a movement in the direction of preventive medicine by opening so-called psychopathic wards in connection with general hospitals, of which the one at Albany is the most noteworthy example.

“ One should not forget to mention the work of the Pathological Institute of the New York State Hospitals, which is a source of inspiration to the assistant physicians who go to Ward’s Island for three months’ instruction and take back to their respective hospitals the knowledge and methods which they have there acquired.

“ These, and many other things which might be mentioned, make a good record,—one of which we may be proud. The most of it comes within the last ten years.

“ It is well for us to meet each year to talk these matters over, to exchange opinions and gain inspiration for our work.

“ The President has informed me that as Chairman of the Committee of Arrangements it is my duty to introduce the speakers of the morning. It certainly is a privilege to introduce to you these gentlemen who are to address to you words of welcome. I present to you first, one who is prominent in public affairs, a journalist, a soldier, and a statesman, who has won distinction in each capacity who was never more respected and honored by good men than he is to-day; an able and faithful executive, who believes in a government of laws and not of men. I have the honor to present to you His Excellency, Curtis Guild, Jr., Governor of the Commonwealth of Massachusetts.” (Applause.)

Gov. GUILD.—The Legislature is in active session to-day, which makes it impossible for me to stay with you as I desire. You will therefore, I am sure, kindly excuse me if I am very brief in my remarks and am obliged to leave you at a very early hour.

It is a very pleasant privilege to be able to welcome you to the Commonwealth of Massachusetts, to extend to you a hearty greeting and

to wish that you may have a profitable as well as a pleasant stay within our borders. The Old Commonwealth is proud of her reputation for benevolence, prouder perhaps than of any other of her characteristics. It may be known to you that she extends her benevolence not only to the cities and towns within her borders, but to those without. No Commonwealth is so generous in the care of the various municipalities and townships of the State. She strips herself of revenue and license fees, for in this State these are given to the separate cities and towns almost entirely. She strips herself of corporation taxes, which in other commonwealths are reserved entirely for State uses, and gives these very largely to the different communities. Like the pelican in her piety, she takes care of the unfortunate and unhappy, which in other commonwealths are provided for by the separate municipalities. The entire cost of caring for the insane in this Commonwealth is borne by the State government.

It is therefore with peculiar propriety that you should be welcomed to-day by the Chief Executive of this Commonwealth. We are proud of the work that has been done here, in which we think we are pioneers, especially the work being done for feeble-minded children. I trust you may have occasion to visit our colonies for these unfortunate youths, where boys who have had absolutely no ray of intelligence have been carefully trained until they are reclaiming useless ground and raising crops on which the occupants of our State institutions are fed.

However, in speaking of the pride of Massachusetts in any of her characteristics, I should refer to a pride that is more than local. Proud as we are of our own Commonwealth, as we are of our own institutions, there is a feeling of loyalty that is broader and deeper and greater. You remember the familiar old phrase, *Homo sum; humani nihil a me alienum puto*: I am a man, and nothing that is human is foreign to me, and what Massachusetts is proudest of is that wherever there is any good to be done, whether it is helping the distressed of San Francisco, the shipwrecked sufferers of Seattle, or those made homeless by the overflowed jetties at New Orleans; whether it is preserving the primitive Appalachian forests of North Carolina, or in the White Hills of New Hampshire that the water supply shall be preserved, there is nothing American that is not at home in the Commonwealth of Massachusetts.

I trust you may find your stay here not only pleasant and interesting, but profitable to yourselves and to those poor unfortunates to whose care and treatment you have devoted your lives. (Great applause.)

DR. TUTTLE.—The physicians of Boston and vicinity and the public, which has taken nearly as much interest as the physicians themselves in certain phases of the work of the American Medical Association, have had a rich feast, perhaps I might almost say a surfeit, of things medical this last week, and the end is not yet. Besides the meetings of our own Association, there are this week

those of the Massachusetts Medical Society, an organization of nearly three thousand physicians of the Commonwealth. We have with us this morning a representative of that Society, and I take pleasure in introducing to you an eminent surgeon, the son of an eminent surgeon, President of the Massachusetts Medical Society, Dr. Arthur T. Cabot. (Applause.)

DR. CABOT.—It gives me pleasure to greet you on behalf of the Massachusetts Medical Society and to give you a hearty welcome to Boston. A former president of our State Society, Dr. Luther V. Bell, was a pioneer in the branch of medicine which you represent and the State of Massachusetts has long taken a special interest in the care of its insane. Indeed, the McLean Asylum, the Perkins Institution for the Blind, the schools for deaf mutes and for feeble-minded, together with the insane hospitals scattered throughout the State, attest the loving care of Massachusetts for those crippled either in body or in mind.

It is an honor that you have selected Boston for your place of meeting, and these gatherings do much to arouse and stimulate an interest among us in the study of mental disorders. The public has been liberal in its charity to the insane since Dr. Rufus Wyman first presided over the McLean Hospital. Constant improvements have been introduced in their care and treatment, largely through the efforts of your Association. It is hard for the present generation to realize that up to the middle of the last century the insane were confined much as criminals are.

Your Association has ever been active in pushing investigation to its utmost limits in the study of mental disease. We look with hope to your chemico-biological investigations as sometime perhaps leading to a better understanding of nerve force, what it is and how it may be fostered, even possibly produced.

The rest of us of the profession who deal most particularly with the grosser ailment of the body must acknowledge a constantly increasing debt to the psychologist who shows the effect of mind upon material substance and teaches us the wonderful power of a disordered mind in causing the body to put on a semblance of disease which does not exist. Many times in each year a surgeon is obliged to decide whether a patient has some internal disease or whether the pains and seeming disturbances of function are fictions of the mind.

It is no new thing that the workings of the mind are potent to make and modify symptoms, and we all recognize that this is the reason for the popular successes of mind cure and of the Christian Scientists, who, blown up with the pride of partly realized truths, think they are in touch with the essence of life.

A most serious practical difficulty which confronts the practitioners of medicine is how to produce on their patients profound psychic effects without resorting to charlatanry or deceit. The management of patients

requiring this sort of treatment is of vast importance and yet is little understood by the general practitioner. We look to you gentlemen, to show how these effects may best be produced, and if you can tell us how they can be produced without deceit we shall be correspondingly grateful.

It has been recently said, with considerable truth, that it is not worth while to deceive a patient. If there are any patients, however, in whom we must sometimes encourage hopes that we do not wholly feel ourselves, they are those with nerves unstrung and minds unbalanced by the exhaustion of serious illness.

In dealing with patients I find it hard to know what is true in diagnosis and prognosis, and I often find by subsequent happenings that my first beliefs, truly held, have been proven false. This being the case it seems better to often refrain from imparting opinions however plausible until they have stood the test of time and to sometimes leave unpleasant news to be disclosed to the sufferer by the Almighty in His own good season.

We wish you great success in your meeting here; may you make substantial advances in accurate knowledge and may your deliberations discover new paths along which further advances may be made.

In closing, Dr. Tuttle reminded me just before I stood up that a long time ago he spoke to me about the possibility of the Medical School Buildings being open to this Association. This afternoon the buildings are in the hands of the Massachusetts Medical Society, and as the President of that Society, I am very happy to extend to you a cordial invitation to visit the buildings at that time. Unfortunately, it is necessary to have some badge or mark by which those who are in charge of the buildings may know that you have had this invitation and that you are the guests of the Massachusetts Medical Society. The reminder from Dr. Tuttle came so late that I am afraid I cannot arrange any formal method of supplying you with badges, but if Dr. Tuttle will sign cards with his name and give them to those who visit the buildings, I will see that that name is regarded as a passport at the gate. (Applause.)

DR. TUTTLE.—The thoughtful citizen of Massachusetts looks with pride upon its State Board of Health, which has a national and an international reputation for its investigation of methods for the purification of water and the disposal of sewage. The present system of our metropolitan water supply was built after designs made by this Board. It makes and distributes the anti-toxin serum which has done so much to limit the fatality of epidemics of diphtheria. It enforces laws against the adulteration of foods and drugs. It protects the public health from unseen dangers.

The one, to whom above all others is due the credit of this

admirable work is he who has been Chairman of the Board for twenty years and who in many other capacities is rendering distinguished public service. I have the honor to present to you the Chairman of the State Board of Health, Chairman of the Board of Trustees of the Massachusetts General Hospital, Dr. Henry P. Walcott. (Applause.)

DR. WALCOTT.—When I accepted Dr. Tuttle's very kind invitation to be present here, I must confess he did not make it understood in what capacity I was to address you. Among the various functions which your Chairman assigned to me, he was very careful not to state that, for a limited term, I was a member of the board which also fulfilled the functions of a commission in lunacy in this Commonwealth. Fortunately, it was a great many years ago, possibly twenty years. The Commonwealth concluded it was better to have an independent board and so established that independent board of insanity which has brought so much credit to the Commonwealth. The State Board of Health has, under the laws of the Commonwealth, very large powers in the exercise of its functions, but I am not quite willing to assume that these functions include caring for the mental as well as the bodily health.

The capacity in which I am most willing to bid you welcome is as trustee of the Massachusetts General Hospital, and the reason for doing it is this: I believe that this hospital has an absolutely unique history among the hospitals of this country or any country, at any rate, of hospitals founded as far back as 1815. It is of course known to you that the great hospitals of the continent earlier than the date mentioned were founded by the great religious orders. The oldest hospital, I think, in this Union was founded by that great Bostonian born and bred, loaned by us to the city of Philadelphia. Then came one or two other similar hospitals, and in 1810 two physicians, and I think this is the first instance in the history of the foundation of hospitals where physicians alone led in the work, issued an appeal to the good people of Massachusetts asking them on the usual grounds of humanity to maintain a hospital for the relief of the disabled sick. That appeal, concluded with one sentence, which appeared then for the first time in a plea for the foundation of a hospital; a statement that this hospital was to provide the community not only with a shelter for the sick, but was to give the community better physicians.

By a fortunate coincidence, for the attention of this meeting at any rate, the first department to be opened was the McLean Asylum at Somerville, since transferred to Waverley, and now called, to illustrate the progress of the treatment of mental diseases, the McLean Hospital, and in the name of that hospital, rather than as a member of the State Board of Health, I prefer to bid you welcome to this community and hope that your stay here may be a pleasant and agreeable one, as I know it will be profitable. (Applause.)

THE PRESIDENT.—The words of welcome, heard by one who has been in attendance upon the meetings of the American Medical Association during the last week carry deep meaning. Never, during my connection with that Association, have arrangements been so elaborate, a greeting more hearty and everything carried on according to a so well-defined plan without jar or a discordant note as in Boston during the last week. The profession of New England has certainly solved the difficult problem of caring for large numbers of visitors and making them comfortable. During that time no one has lacked for anything which he required in reason and a hearty greeting has come to everyone from every source.

I am gratified that those in this Association, who come in at the eleventh hour, so to speak, are still not to be deprived of their penny. We thank you very much for your cordial welcome, and in the name of the Association, I would invite all the physicians who can find it convenient to do so to attend the meetings of this Association and participate in its discussions. Also those interested in charitable work in connection with hospitals or eleemosynary institutions. There is as a rule much in the program of this Association of general interest.

We thank you again very heartily for this warm and cordial greeting. (Applause.)

THE PRESIDENT.—The next on the order of business is the report of the Committee of Arrangements.

DR. TUTTLE.—Your Committee of Arrangements has a brief report to make because it has had little to do. When we were informed of our election, we were also informed of this resolution which was passed by the Council:

"Resolved, That it be the sense of this Council that whereas the custom of the local members of the Association, and the local profession, furnishing social entertainment for us entails an extra and unnecessary expense to them, it should be eliminated. And be it further

"Resolved, That the local committee be instructed and requested to secure a suitable place for meeting, arrange for hotel accommodations, and provide the speakers for the Annual Address and the Address of Welcome, and that this should constitute their whole duty."

We found, however, that something else needed to be done and that was the securing of a reduction in rates from the different

passenger associations of the country. Our membership is so small that they would give us little consideration. We tried to come in under the shelter of the American Medical Association and to get the same rates for our members, but without avail until the American Academy of Medicine, the Pension Examiners, and above all the Christian Scientists decided to come here in the second week of June, when the railroads became reasonable (laughter), and we got the same reduction in rate that was given to the American Medical Association.

We selected The Vendome because it is in a quiet location, is a good house, has a good audience room and gives a reduction from its regular rates to our members.

We have exceeded our instructions in some particulars, as, for instance, in suggesting the visit to the Harvard Medical School buildings, to which you have had an invitation. I think you should accept this invitation and see the latest expression in buildings of what is needed for a medical education. In expense and completeness they come first, so far as I know, in the world.

Also I am authorized by the trustees of the Massachusetts General Hospital to invite the Association to hold their afternoon meeting on Thursday at the McLean Hospital at Waverley. If it is a pleasant day, special cars will leave Boston immediately after the morning session, arriving at Waverley in season for luncheon, after which the Association can visit the hospital and hold the afternoon meeting.

There is one thing which the committee has done. The Section of Psychiatry of the American Medical Association, as well as other sections, had exhibits, and the various hospitals for the insane in Massachusetts had such an exhibit which has been kept together and will be set up in the old Harvard Medical School building, Boylston street, corner Exeter, Lecture Room "E." It will be ready for inspection to-morrow evening. It is not very large, but is something new and I think it is worth a visit. You will find there specimen histories and records, photographs of Massachusetts institutions, products of patients' industry, enlargements of micrographs to illustrate histological work, and other histological work, and other preparations of interest to psychiatry. They will be ready for inspection early to-morrow morning.

Although your committee was forbidden to provide special en-

tertainments, having observed that no one except the President and Secretary is obliged to be here and listen to all the papers (laughter), we have arranged with the committee of the American Medical Association who were preparing a guide book to print enough so that we could have what we needed. Consequently we have thus obtained a guide book of Boston which will enable you to find your way about and make various excursions for your diversion. We also have obtained time tables for the Plymouth and Gloucester boats, which you may find useful.

Beyond this, your committee has done nothing. (Laughter and applause.)

Dr. Woodson moved that this report be accepted and adopted and that a vote of thanks be tendered the committee for the very thorough manner in which they have performed their duties. Carried unanimously.

THE PRESIDENT.—I assume that this carries with it the acceptance of the invitation to go to the Harvard Medical School this afternoon.

A motion was then adopted that the Association adjourn this afternoon at 3.30 o'clock to accept the invitation to visit the Harvard Medical School, and that the rest of the program be postponed until evening, so that Wednesday's program may not be disarranged.

THE PRESIDENT.—As you know, the hand of death has been laid heavily upon the Association during the past year. Among those who have died are my warm personal friend, Dr. Edwards; that patriarch in psychiatry, Dr. Stearns; that courtly Southern gentleman, Dr. Blackford; that pillar of the Association, Dr. Richardson; that accomplished physician, Dr. Langdon; and lastly, our late beloved Secretary, Dr. Dent. Memorial notices of all these will be read in due time, but it seems fitting that that portion of the report of the Council which has to do with its action in New York last January, following Dr. Dent's death, with the memorial which accompanies it, be accepted and adopted by the Association. I will ask the Secretary to read that portion of the report at this time (see page 577).

The report was then accepted, adopted and ordered spread on the records of the Association.

THE PRESIDENT.—I also would announce that memorial notices of Dr. John F. Miller, of Goldsboro, N. C., and Dr. J. W. Smith, Fulton, Mo., of whose death the Chair has just learned will be prepared for the coming volume of the Transactions.

I will now call upon the Secretary for the second portion of the Council's report.

REPORT OF THE COUNCIL.

At a meeting of the Council held June 11, 1906, it was resolved: "That it be the sense of this Council that in the case of a member dropped for non-payment of dues, he may be reinstated on written application to the Council, provided the back dues are paid and there is no other objection to his election."

The following resolution was also adopted: "That it be the sense of this Council that an associate member in good standing who makes written application for active membership, not less than three years after his election to associate membership, may be elected to active membership at any meeting of the Council and his name submitted for final approval to the Association."

The appropriation of \$200.00 for the American Journal of Insanity was approved.

The appropriation of \$25.00 for the use of the American Committee of the International Medical Congress was approved.

The report of the Treasurer has been received and is referred to the Association for consideration to-day.

The report was accepted and adopted.

THE SECRETARY: The Council recommends the following named physicians for membership in the Association.

For Honorary Membership.—Henry M. Bannister, M. D., Evanston, Ill.; Daniel Clark, M. D., Toronto, Ontario.

For Active Membership.—George Sheldon Adams, M. D., Yankton, S. D.; Charles Lewis Allen, M. D., Trenton, N. J.; James Vickers Anglin, M. D., St. John, N. B.; Henry S. Atkins, M. D., St. Louis, Mo.; Christopher C. Beling, M. D., Morris Plains, N. J.; James R. Bolton, M. D., Fishkill-on-Hudson, New York; M. D. Brochu, M. D., Beauport, Que.; Henry Buttolph Carriel, M. D., Jacksonville, Ill.; L. Pierce Clark, M. D., New York City; Charles Gorst, M. D., Mendota, Wis.; George Tryon Harding, M. D., Columbus, Ohio; Charles E. Laughlin, M. D., Evansville, Ind.; G. H. Moody, M. D., San Antonio, Texas; Charles H. North, M. D., Dannemora, N. Y.; Herman Ostrander, M. D., Kalamazoo, Mich.; John

Preston, M. D., Abilene, Texas; John T. W. Rowe, M. D., Ward's Island, New York City; William L. Russell, M. D., Poughkeepsie, N. Y.; Edward A. Sharp, M. D., Katonah, N. Y.; Charles Edward Thompson, M. D., Gardner, Mass.; Berthold A. Williams, M. D., College Hill, Ohio; Samuel Worcester, M. D., Stamford, Conn.; David Young, M. D., Selkirk, Manitoba; George S. Youngling, M. D., Central Islip, N. Y.; George A. Zeller, M. D., Peoria, Ill.

For Associate Membership.—William W. Coles, M. D., Westborough, Mass.; Edward L. Hanes, M. D., Sonyea, N. Y.; Morris J. Karpas, M. D., Ward's Island, New York City; James A. Mackintosh, M. D., Worcester, Mass.; Grace E. White, M. D., Frankford, Philadelphia, Pa.

For Reinstatement.—Marcus B. Heyman, M. D., Central Islip, N. Y.

The following applications for active membership were considered informally, and in accordance with the Constitution were deferred for final action until the next annual meeting:

Charles W. Burr, M. D., Philadelphia, Pa.; L. H. Calloway, M. D., Nevada, Mo.; Earl H. Campbell, M. D., Newberry, Mich.; Charles Edward Doherty, M. D., New Westminster, B. C.; Charles E. Hickey, M. D., Coburg, Ont.; William F. Kuhn, M. D., Farmington, Mo.; Donald Campbell Meyers, M. D., Deer Park, Toronto, Ont.; Daniel T. Millspaugh, M. D., Paterson, N. J.; William Pickett, M. D., Philadelphia, Pa.; Frederick D. Ruland, M. D., Westport, Conn.; Edward Ryan, B. A., M. D., Kingston, Ont.; William E. Sylvester, M. D., New York City; P. H. S. Vaughan, M. D., Bangor, Maine; Malcolm H. Yeaman, M. D., Lakeland, Ky.

THE PRESIDENT.—The names of those recommended for election to membership will lie upon the table until to-morrow morning, in accordance with the Constitution. The other names will be referred to the Council for final action next year.

The report of the Treasurer of the American Medico-Psychological Association for 1905-1906 was then read as follows:

RECEIPTS.

Balance on hand.....	\$1,876.89
Dues from Active Members.....	1,409.90
Dues from Associate Members.....	245.15
Interest	59.16
Sale of Gummed Lists.....	7.50
Sale of Transactions	1.00
Sale of Blackburn's Autopsies.....	1.50
Sale of Index Medicus.....	5.00
Total Receipts	\$3,606.10

EXPENDITURES.

Printing and Publishing Transactions, 1904.....	\$ 934.88
Silver Loving Cup, Dr. Hurd.....	100.00
American Journal of Insanity, annual appropriation.....	200.00
Postage, including mailing Transactions for 1904 and 1905.....	179.54
Expressage for 1904 and 1905.....	26.28
Clerical Assistance	65.00
Programs and Circulars, meeting 1905.....	15.50
Programs and Circulars, meeting 1906.....	14.75
Printing and Stationery	19.30
Receipt Book	3.75
Traveling Expenses, stenographer attending San Antonio meeting	63.55
Expenses stenographer attending special meeting of Council in N. Y., and one trip to Poughkeepsie.....	4.15
Telegrams	25.22
Typewriting, Postage, etc., Committee on Program....	11.40
Apportionment of expenses, of Committee of International Congress	25.00
Bank Exchange, charges on foreign checks.....	1.36
Freight .....	.91
Balance on Hand.....	1,915.51
	<hr/>
	\$3,606.10
Dues unpaid:	
Active Members	\$ 370.00
Associate Members	70.00
	<hr/>
Total	\$ 440.00

Respectfully submitted,
 (Signed) CHAS. W. PILGRIM,
Treasurer.

THE PRESIDENT.—If there be no objection, the report of the Treasurer will be accepted and referred to the Auditors. The Chair hears no objection and the report is so referred.

The report from the editors of the American Journal of Insanity was read by Dr. Henry M. Hurd, who said that he regretted to report that Dr. Brush, the managing editor of the Journal, was prevented from being present by the sudden and serious illness of a member of his staff and consequently he read the report, which had been prepared.

DR. HURD.—Mr. President, I have the honor also of presenting the vouchers of the Journal for the past year.

On motion, the report of the editors was accepted and ordered spread on the minutes of the Association and the financial portion thereof referred to the Auditors.

THE PRESIDENT.—The Chair appoints the following named gentlemen as the Nominating Committee:

Dr. Richard Dewey, of Wisconsin.

Dr. Edward Cowles, of Massachusetts.

Dr. T. O. Powell, of Georgia.

I will now announce a recess of fifteen minutes for registration. It is requested that all those present, whether members or visitors, register their names with the Secretary.

The following members registered as being in attendance during the whole or a part of the meeting:

Abbot, E. Stanley, M. D., Assistant Physician, McLean Hospital, Waverley, Mass.

Adams, George S., M. D., Superintendent, Westborough Insane Hospital, Westborough, Mass.

Allen, Henry D., M. D., Medical Director, Allen's Invalid Home, Milledgeville, Ga.

Anglin, James V., M. D., Medical Superintendent, The Provincial Hospital, St. John, New Brunswick.

Applegate, Charles F., M. D., Superintendent, Mt. Pleasant State Hospital, Mt. Pleasant, Iowa.

Atkins, Henry S., M. D., Medical Superintendent, City Insane Asylum, St. Louis, Mo.

Ayer, James B., M. D., Massachusetts State Board of Insanity, 518 Beacon Street, Boston, Mass.

Baker, Jane Rogers, M. D., Superintendent, Chester County Home and Hospital for Insane, Embreeville, Pa.

Baldwin, Henry C., M. D., 126 Commonwealth Avenue, Boston, Mass.

Bancroft, Charles P., M. D., Superintendent, New Hampshire State Hospital, Concord, N. H.

Bartlett, P. Challis, M. D., Assistant Physician, Worcester Insane Asylum, Worcester, Mass.

Beemer, Nelson H., M. D., Medical Superintendent, Mimico Asylum for Insane, Toronto, Ont.

Beutler, W. F., M. D., Superintendent, Asylum for Chronic Insane, Wauwatosa, Wis.

Blumer, G. Alder, M. D., Medical Superintendent, Butler Hospital, Providence, R. I.

Brooks, Ida J., M. D., Assistant Physician, Westborough Insane Hospital, Westborough, Mass.

Brownrigg, A. E., M. D., Medical Superintendent, Highland Spring Sanitarium, Nashua, N. H.

Buchanan, J. M., M. D., Superintendent East Mississippi Insane Hospital, Meridian, Miss.

Burgess, T. J. W., M. D., Medical Superintendent, Protestant Hospital for Insane, Box 2381, Montreal, Quebec.

Burr, C. B., M. D., Medical Director, Oak Grove Hospital, Flint, Mich.

Caples, Byron M., M. D., Medical Superintendent, Waukesha Springs Sanitarium, Waukesha, Wis.

Carlisle, Chester Lee, M. D., Assistant Physician, Willard State Hospital, Willard, N. Y.

Carriel, Henry B., M. D., Superintendent, Illinois Central Hospital for the Insane, Jacksonville, Ill.

Clark, J. Clement, M. D., Superintendent, Springfield State Hospital, Sykesville, Md.

Clarke, Charles K., M. D., Superintendent, Toronto Asylum, 999 Queen Street, W., Toronto, Ont.

Coe, Henry Waldo, M. D., Medical Director, Crystal Springs (Mind-ease), Portland, Ore.

Coleburn, Arthur B., M. D., Assistant Physician, Connecticut Hospital for Insane, Middletown, Conn.

Coles, William W., M. D., Assistant Physician, Westborough Insane Hospital, Westborough, Mass.

Copp, Owen, M. D., Secretary and Executive Officer, Massachusetts State Board of Insanity, Room 36, State House, Boston, Mass.

Coriat, Isador H., M. D., Assistant Visiting Physician, Nerve Department Boston City Hospital and Mt. Sinai Hospital, Warren Chambers, 419 Boylston Street, Boston, Mass.

Cowles, Edward, M. D., 419 Boylston Street, Boston, Mass.

Dewey, Richard, M. D., Physician in Charge, Milwaukee Sanitarium, Wauwatosa, Wis.

Dewing, O. M., M. D., Medical Superintendent, Long Island State Hospital, Brooklyn, N. Y.

Dill, D. M., M. D., Superintendent, Essex County Hospital for the Insane, 425 South Orange Avenue, Newark, N. J.

Drew, Charles A., M. D., Medical Director, Massachusetts State Asylum for Insane Criminals, State Farm, Mass.

Edenharter, George F., M. D., Medical Superintendent, Central Indiana Hospital for Insane, Indianapolis, Ind.

Edgerly, J. Frank, M. D., 1 Mt. Vernon Terrace, Newtonville, Mass.

Elliott, Robert M., M. D., Medical Superintendent, Willard State Hospital, Willard, Seneca County, N. Y.

Evans, Britton D., M. D., Medical Director, The New Jersey State Hospital at Morris Plains, Morris Plains, N. J.

Eyman, Henry C., M. D., Medical Superintendent, Massillon State Hospital, Massillon, Ohio.

French, Edward M. D., Superintendent, Medfield Insane Asylum, Medfield, Mass.

Frost, Henry P., M. D., First Assistant Physician, Buffalo State Hospital, Buffalo, N. Y.

Fuller, Solomon C., M. D., Pathologist, Westborough Insane Hospital, Westborough, Mass.

Goodwill, V. L., M. D., Medical Superintendent, Prince Edward Island Hospital for the Insane, Charlottetown, P. E. I., Canada.

Gordon, W. A., M. D., Superintendent, Northern Hospital for Insane, Winnebago, Wis.

Gundry, Richard F., M. D., Medical Director, The Richard Gundry Home, Catonsville, Md.

Hall, Henry C., M. D., Assistant Physician, Butler Hospital, Providence, R. I.

Hancker, William H., M. D., Medical Superintendent, Delaware State Hospital, Farnhurst, Del.

Harding, George T., Jr., M. D., Superintendent, Washington Branch Sanitarium, No. 2 Iowa Circle, Washington, D. C.

Harmon, F. W., M. D., Superintendent, Longview State Hospital, Cincinnati, Ohio.

Harris, Isham G., M. D., First Assistant Physician, Hudson River State Hospital, Poughkeepsie, N. Y.

Hattie, William H., M. D., Medical Superintendent, Nova Scotia Hospital, Halifax, N. S.

Heyman, M. B., M. D., First Assistant Physician, Central Islip State Hospital, Central Islip, L. I., N. Y.

Hill, Charles G., M. D., Physician in Charge, Mt. Hope Retreat, Station E., Baltimore, Md.

Hill, Gershom H., M. D., Equitable Building, Des Moines, Iowa.

Hitchcock, Chas. W., M. D., Attending Neurologist, Harper Hospital, 270 Woodward Avenue, Detroit, Mich.

Hobbs, A. T., M. D., Medical Superintendent, Homewood Sanitarium, Guelph, Ont.

Hoch, Theodore A., M. D., First Assistant Physician, Worcester Insane Hospital, Worcester, Mass.

Houston, John A., M. D., Superintendent, Northampton State Hospital, Northampton, Mass.

Howard, Adams B., M. D., Superintendent, Cleveland State Hospital, Cleveland, Ohio.

Howard, Eugene H., M. D., Medical Superintendent, Rochester State Hospital, Rochester, N. Y.

Howard, Emily Pagelson, M. D., Massachusetts General Hospital, Boston, Mass.

Howard, Herbert B., M. D., Massachusetts General Hospital, Boston, Mass.

Hurd, Henry M., M. D., Superintendent, The Johns Hopkins Hospital, Baltimore, Md.

Hutchings, Richard H., M. D., Medical Superintendent, St. Lawrence State Hospital, Ogdensburg, N. Y.

Hutchinson, Henry A., M. D., Physician and Superintendent, Western Pennsylvania Hospital for the Insane, Dixmont, Allegheny County, Pa.

Jelly, George F., M. D., Chairman, Massachusetts State Board of Insanity, 69 Newberry Street, Boston, Mass.

Kilbourne, Arthur F., M. D., Medical Superintendent, Rochester State Hospital, Rochester, Minn.

Kinney, C. Spencer, M. D., Easton Sanitarium, Easton, Pa.

Klopp, Henry I., M. D., Assistant Superintendent, Westborough Insane Hospital, Westborough, Mass.

Knapp, John Rudolph, M. D., Assistant Physician, Manhattan State Hospital, Ward's Island, New York City.

Knowlton, Wallace M., M. D., Channing Sanitarium, Brookline, Mass.

Lamb, Robert B., M. D., Medical Superintendent, Matteawan State Hospital, Fishkill-on-Hudson, New York.

Langdon, F. W., M. D., Medical Director, Cincinnati Sanitarium, 5 Garfield Place, Cincinnati, Ohio.

Lyon, Samuel B., M. D., Medical Superintendent, Bloomingdale, White Plains, N. Y.

Lyons, A. J., M. D., Superintendent, Second Hospital for Insane, Spencer, West Virginia.

Mabon, William, M. D., Superintendent and Medical Director, Manhattan State Hospital, Ward's Island, New York City.

MacCallum, G. A., M. D., Medical Superintendent, Asylum for the Insane, London, Ont.

Macdonald, Alexander E., M. D., 431 Riverside Avenue, New York City.

Macphail, Andrew, M. D., Pathologist, Protestant Hospital for the Insane, 216 Peel Street, Montreal, Quebec.

McDonald, William, Jr., Clinical Director, Butler Hospital, Providence, R. I.

Macy, William Austin, M. D., Superintendent, Kings Park State Hospital, Kings Park, N. Y.

Meredith, Hugh B., M. D., Superintendent, State Hospital for the Insane, Danville, Pa.

Meyer, Adolf, M. D., Director, Pathological Institute New York State Hospitals, Ward's Island, New York City.

Miller, Harry W., M. D., Pathologist and Assistant Physician, Taunton Insane Hospital, Taunton, Mass.

Mitchell, H. W., M. D., Senior Assistant Physician, Danvers Insane Hospital, Hathorne, Mass.

Mitchell, Thomas J., M. D., Superintendent, State Insane Hospital, Asylum, Miss.

Moody, G. H., Physician in Charge, Dr. Moody's Sanitarium, San Antonio, Texas.

Mosher, J. Montgomery, M. D., Attending Specialist in Mental Diseases, Albany Hospital, Albany, N. Y.

Murphy, P. L., M. D., Superintendent, State Hospital at Morganton, Morganton, N. C.

North, C. H., M. D., Medical Superintendent, Dannemora State Hospital, Dannemora, N. Y.

Noyes, William, M. D., Superintendent, Boston Insane Hospital, Mattapan, Mass.

Orth, H. L., M. D., Superintendent and Physician, Pennsylvania State Lunatic Hospital, Pouch "A," Harrisburg, Pa.

Page, Charles W., M. D., Superintendent and Physician, Danvers Insane Hospital, Hathorne, Mass.

Palmer, Harold L., M. D., Superintendent, Utica State Hospital, Utica, N. Y.

Perry, Middleton L., M. D., Superintendent, Kansas State Hospital for Epileptics, Parsons, Kansas.

Pilgrim, Charles W., M. D., President, New York State Commission in Lunacy, Poughkeepsie, N. Y.

Powell, T. O., M. D., Superintendent, Georgia State Sanitarium, Milledgeville, Ga.

Pomeroy, E. H., M. D., Monterey, Tennessee.

Redwine, J. S., M. D., Medical Superintendent, Eastern Kentucky Asylum for the Insane, Lexington, Ky.

Rowe, John T. W., M. D., First Assistant Physician, Manhattan State Hospital, Ward's Island, New York City.

Scribner, Ernest V., M. D., Medical Superintendent, Worcester Insane Asylum, Box 1178, Worcester, Mass.

Searcy, James T., M. D., Medical Superintendent, The Alabama Insane Hospitals, Tuscaloosa, Ala.

Searl, William A., M. D., Medical Director, Fair Oaks Villa, Cuyahoga Falls, Ohio.

Shepherd, Arthur F., Superintendent, Dayton State Hospital, Dayton, Ohio.

Smith, George A., M. D., Superintendent, Central Islip State Hospital, Central Islip, L. I., N. Y.

Sprague, George P., Superintendent and Proprietor, Dr. Sprague's Sanitarium, Lexington, Ky.

Stockton, George, M. D., Superintendent, Columbus State Hospital, Columbus, Ohio.

Taylor, Isaac M., M. D., Superintendent and Resident Physician, Broad-oaks Sanitarium, Morganton, N. C.

Thompson, W. N., M. D., Superintendent, Hartford Retreat, Hartford, Conn.

Tomlinson, H. A., M. D., Superintendent St. Peter State Hospital, St. Peter, Minn.

Tuttle, George T., M. D., Medical Superintendent, McLean Hospital, Waverley, Mass.

Wagner, Charles G., M. D., Medical Superintendent, Binghampton State Hospital, Binghampton, N. Y.

Wentworth, Lowell F., M. D., Deputy Executive Officer State Board of Insanity, 36 State House, Boston, Mass.

White, M. J., M. D., Medical Superintendent, Milwaukee Hospital for Insane, Box "A," Wauwatosa, Wis.

White, Wm. A., M. D., Superintendent, Government Hospital for the Insane, Washington, D. C.

Wolfe, Mary M., M. D., Chief Physician, Women's Department, Norristown State Hospital, Norristown, Pa.

Woodbury, Charles E., M. D., Medical Superintendent, Foxboro State Hospital, Foxboro, Mass.

Woodson, C. R., M. D., Superintendent, State Hospital No. 2, St. Joseph, Mo.

Work, Hubert, M. D., Superintendent and Proprietor, Woodcroft Hospital, Pueblo, Colo.

Zeller, Geo. A., M. D., Superintendent, Illinois Asylum for Incurable Insane, 1201 S. Bartonville, Peoria, Ill.

The following visitors and guests of the Association registered their names with the Secretary:

Abbot, Florence Hale, M. D., Assistant Physician, Taunton Insane Hospital, Taunton, Mass. "Drawer D."

Atkinson, Goodwin T., M. D., Member Board of Managers, Springfield State Hospital, Sykesville, Maryland.

Bailey, Alexander, M. D., Acting Superintendent, Western Kentucky Asylum, Hopkinsville, Ky.

Barnhardt, W. T., M. D., Toronto, Ont., Canada.

Burr, Annette W., Oak Grove Hospital, Flint, Mich.

Burr, Miss Ernestine, Flint, Mich.

Bliss, George S., M. D., Assistant Physician, Massachusetts School for Feeble Minded, Waverley, Mass.

Board, Milton, Member Kentucky State Board of Control, Western Kentucky Asylum for the Insane, Hopkinsville, Ky.

Bradt, Miss Cecelia K., McLean Hospital, Waverley, Mass.

Brantley, John T., Member Board of Trustees, State Sanitarium, Milledgeville, Georgia.

Brantley, Mrs. John T.

Briggs, L. Vernon, M. D., Physician to the Mental Department of the Boston Dispensary, 208 Beacon Street, Boston, Mass.

Buchanan, Mrs. J. M., Meridian, Miss.

- Buhrman, E. Ray, M. D., Assistant Physician, Westborough Insane Hospital, Westborough, Mass.
- Caples, Byron M., Waukesha, Wis.
- Carlisle, Mrs. Chester Lee, Willard, N. Y.
- Clark, Miss Margaret E., Waverley, Mass.
- Clarke, Mrs. C. K., Toronto Asylum, Toronto, Ont., Canada.
- Cogan, Joseph A., M. D., Warren Chambers, Boston, Mass.
- Coles, Ruth Barker, M. D., Assistant Physician, Westborough Insane Hospital, Westborough, Mass.
- Coriat, Mrs. Isador H., Worcester, Mass.
- Cutter, Charles K., M. D., Somerville Associated Charities, 175 School Street, Winter Hill, Mass.
- Dill, Mrs. D. M., Newark, N. J.
- Doherty, Charles E., M. D., Medical Superintendent, British Columbia Public Hospital for Insane, New Westminster, B. C., Canada.
- Drew, Mrs. Charles A., State Farm, Mass.
- Dunbar, Mr. F. H., 150 Botolph Street, Boston, Mass.
- Folin, Otto, Assistant in Chemistry, McLean Hospital, Waverley, Mass.
- Fernald, Guy G., M. D., Second Assistant Physician, McLean Hospital, Waverley, Mass.
- Fleming, Mark S., M. D., Assistant Physician, Hudson River State Hospital, Poughkeepsie, N. Y.
- Flett, Penelope M., Florence Crittenden Home, Watertown, Waverley, Mass.
- Franz, Shepherd I., Assistant in Pathology and Physiology, McLean Hospital, Waverley, Mass.
- French, Mrs. Martha C., Medfield, Mass.
- Gilbert, Miss Frances E., Robinwood Avenue, Jamaica Plain, Mass.
- Graham, Dr. D., Boston, Mass.
- Guild, His Excellency, Curtis, Jr., Governor of Massachusetts.
- Haynes, Mary W., Waverley, Mass.
- Heyman, Mrs. Marcus B., Central Islip, L. I., N. Y.
- Hill, J. W., M. D., Medical Superintendent, Kentucky Feeble Minded Institute, Frankfort, Ky.
- Hill, Mrs. J. W., Frankfort, Ky.
- Holmes, David H., McLean Hospital, Waverley, Mass.
- Holmes, Mrs. D. H., McLean Hospital, Waverley, Mass.
- Hopkinson, Samuel W., Trustee Danvers Insane Hospital, Hathorne, Bradford, Mass.
- Hutchings, Mrs. R. H., Ogdensburg, N. Y.
- Hutchinson, Claribel M., 814 Main Street, Waltham, Mass.
- Howard, Mrs. Eugene B., State Hospital, Rochester, N. Y.
- Jones, E. Kathleen, McLean Hospital, Waverley, Mass.
- Jordan, M. M., M. D., Junior Assistant Physician, Westborough Insane Hospital, Box 288, Westborough, Mass.
- Love, Mrs. Andrew J., Chattanooga, Tenn.

MacCallum, W. G., M. D., Associate Professor of Pathology, Resident Pathologist, Johns Hopkins Hospital, Baltimore, Md.

McIntosh, Miss J., McLean Hospital, Waverley, Mass.

McGarr, Mr. T. E., Secretary, New York State Commission in Lunacy, Albany, N. Y.

Miller, Lottie H., Superintendent of Nurses, Westborough Insane Hospital, Westborough, Mass.

Miller, Gertrude Wright, Taunton, Mass.

Millspaugh, Daniel J., M. D., Medical Superintendent, Riverlawn Sanitarium, Paterson, N. J.

Niven, Nora E., McLean Hospital, Waverley, Mass.

Norton, Eben C., M. D., Superintendent, Private Hospital for Mental Diseases, Norwood, Mass.

Oosterbeek, J. G., M. D., Assistant Physician, Illinois Asylum for the Incurable Insane, 1201 South Bartonville, Peoria, Ill.

Packard, Mrs. F. H., Waverley, Mass.
Waverley, Mass.

Packard, Mrs. F. H., Waverley, Mass.

Powell, Mrs. T. O., Milledgeville, Ga.

Ring, A. H., Superintendent, Arlington Health Resort, Arlington Heights, Mass.

Scribner, Mrs. E. V., Worcester, Mass.

Searl, Mrs. William A., Cuyahoga Falls, Ohio.

Shaw, Helma, 3 Rock Street, Middleboro, Mass.

Steele, S. M., M. D., Superintendent, West Virginia Hospital for the Insane, Weston, W. Va.

Tuttle, Abbie P., McLean Hospital, Waverley, Mass.

Tuttle, Sherburne B., McLean Hospital, Waverley, Mass.

Van Nuys, W. C., M. D., Medical Superintendent, Indiana Village for Epileptics, New Castle, Indiana.

Vaughan, P. H. S., M. D., Superintendent, Eastern Maine Insane Hospital, Bangor, Maine.

Woodward, L. E., Superintendent of Nurses, McLean Hospital, Waverley, Mass.

Woodworth, R. S., Adjunct Professor of Psychology, Columbia University, New York City.

Yeaman, Malcolm H., M. D., Medical Superintendent, Central Kentucky Asylum for the Insane, Lakeland, Ky.

Yeaman, Mrs. Malcolm H., Lakeland, Ky.

Younglove, John, M. D., Elizabeth, N. J.

The Association reconvened after the recess and was called to order by the Vice-President.

THE VICE-PRESIDENT.—We shall now have the pleasure of listening to the annual address of our President, who needs no introduction to this Association. (Applause.)

The President then read his address, "The Physician as a Character in Fiction," which was greeted with much applause.

DR. HILL.—Gentlemen, you have given very close attention to the interesting address of our President. You have been presented with a very interesting kaleidoscopic view of ourselves and our profession in the eyes of literary genius.

DR. WOODSON.—I move that the Association extend a vote of thanks to the retiring President for this most interesting, progressive, and excellent address. Carried unanimously by a rising vote.

THE PRESIDENT.—I thank you very much for your kind expression.

A recess was then taken until 2.30 p. m.

SECOND SESSION.

The meeting was called to order by the President at 2.30 p. m.

THE PRESIDENT.—This Association has been favored from year to year by an address from some distinguished person, in its membership or out, on subjects in which we are interested. It gives me great pleasure to introduce to you Prof. Robert S. Woodworth, of Columbia University, who will deliver the annual address, entitled, "Psychiatry and Experimental Psychology."

Prof. Woodworth then read his address, which was greeted with much applause.

DR. C. G. HILL.—I move that a vote of thanks be tendered Prof. Woodworth for his valuable and able address.

THE PRESIDENT.—I am sure we will respond to that with cordial enthusiasm. Carried unanimously by a rising vote.

If there is no objection, we will now take a recess until 8.30 to-night. The Chair hears no objection.

A recess was then taken until 8.30 p. m.

THIRD SESSION.

The Association was called to order by the President at 8.30 p. m.

THE PRESIDENT.—The Chair would announce that he has taken

the liberty of appointing Dr. Byron M. Caples to act as Auditor with Dr. Hancker, vice Dr. A. W. Hurd who is not here.

The action of the President was approved by unanimous consent.

The following papers were then read: "The Unity of Insanity," by Dr. H. A. Tomlinson, St. Peter, Minnesota, which was discussed by Drs. Hughes, Henry M. Hurd, and H. A. Tomlinson in closing; "Retrospective—Prospective," by Dr. H. C. Eyman, of Massillon, Ohio, which was discussed by the President and Dr. Hughes; "Deterioration and Practical Psychiatry," by Dr. John R. Knapp, of New York City, which was discussed by Dr. Tomlinson and Dr. Knapp in closing.

DR. HENRY M. HURD.—At the last meeting of the Association, a committee was appointed to consider the subject of continued affiliation with the Congress of American Physicians and Surgeons. You may remember that under the arrangement made some four years ago, we became affiliated with this Congress, which meets in Washington once in three years.

At the last meeting in San Antonio, Dr. Macdonald made some statements in reference to the question of affiliation and it was thought desirable that a committee should be appointed to consider the question, and such a committee was appointed. I understand that the committee has not considered the question and is not prepared to report. Under the circumstances, then, I would move that this committee be discharged from any further consideration of the question.

Seconded by Dr. Hubert Work as a member of the committee and carried.

"What Shall We Do With the Drunkard," by Dr. Ezra B. Potter, Rochester, N. Y., was read by title.

Adjourned.

WEDNESDAY, JUNE 13, 10.00 A. M.

The meeting was called to order by the President.

THE PRESIDENT.—I have received a letter from Dr. R. J. Preston, of Virginia, sometime President, who regrets that he cannot

attend this meeting of the Association. His presence, I am sure, is very much missed.

The following letter was read by the Secretary:

431 RIVERSIDE AVENUE, NEW YORK CITY, June 13, 1906.

MY DEAR DOCTOR.—I have the honor to report that, in accordance with the assignment of the American Medico-Psychological Association, I attended the International Medical Congress at Lisbon, on April 19-26, and presented my credentials as representing that Association.

Yours very truly,

(Signed) A. E. MACDONALD.

DR. C. B. BURR, Oak Grove Hospital, Flint, Mich.

THE SECRETARY.—I have also received a letter from Dr. Macdonald saying he would be here to-morrow and make a report.

THE PRESIDENT.—It will be necessary, I believe, to select a delegate and alternate to the Congress of American Physicians and Surgeons for the coming meeting. Inasmuch as there is no special order of business this will be taken up now if the Association pleases.

DR. HENRY M. HURD.—I move that the Council be requested to appoint a member of the Executive Committee and an alternate for the Congress of American Physicians and Surgeons. Carried.

DR. MABON.—Mr. President: The British Medical Association meets in Toronto this year and inasmuch as Dr. A. E. Macdonald has represented us on other occasions, I move that he represent this Association at that meeting.

Dr. Mabon's motion was duly seconded and carried unanimously.

DR. BEEMER.—Mr. President: While on the subject of the British Medical Association meeting at Toronto, I would say that I have been asked by the President of the Association, and as a Vice-President of the Psychological Section, I join in the request, to request you to extend to the members of this Association a cordial invitation to attend that meeting, which will be held at Toronto in August.

THE PRESIDENT.—I am sure, Dr. Beemer, that I voice the sentiment of the Association when I thank you for this very cordial invitation.

The next on the order of business is the election of members.

The Secretary read the list of physicians proposed for membership in the Association. (This list is given on pages 62 and 63)

THE PRESIDENT.—You have heard the names of those proposed for honorary, active, and associate membership, and for reinstatement. The Constitution provides that this election shall be by ballot. What is the pleasure of the Association?

DR. MURPHY.—I move that the Secretary be instructed to cast the ballot of the Association for these physicians, electing them to membership. Carried.

THE PRESIDENT.—The Secretary announces that the ballot has been cast and the candidates elected. The names you have heard read will be placed on the rolls of the Association.

DR. MABON.—May I permitted to call the attention of this Association to a matter of considerable importance in the care of the insane? In 1893, Dr. Wise, a member of this Association, presented a paper on the "After Care of the Insane." In 1894 and again in 1905, Dr. Richard Dewey, also a member of this Association, discussed the subject in papers read before the National Conference of Charities.

Dr. Henry R. Stedman, as chairman of a committee of the American Neurological Association on the after care of the insane, appointed in 1894, submitted and published a report in 1897. This he followed up by a paper before the National Conference of Charities and Correction and both these reports were published and distributed in pamphlet form. He collected much information of value from those who are interested in the care and treatment of the insane, particularly from those who are superintendents of institutions for mental disease.

No systematic efforts were made, I believe, to undertake this work until last fall, when the State Charities Aid Association of New York State, through the initiative of Miss Louisa Lee Schuyler, had a conference with the State Commission in Lunacy and the hospital superintendents and undertook to inaugurate the work. One After Care Committee has been formed in connection with the Manhattan State Hospital, and one with the Willard

State Hospital, and these committees are to be further extended to provide for the various hospitals of New York State.

The work that has been accomplished will be found in the report, a copy of which has been sent to the various superintendents throughout the country.

In view of the importance of this work, I would offer and move the adoption of the following resolutions:

WHEREAS, The State Charities Aid Association of New York has recently established a Committee on the After Care of the Insane, to work in co-operation with the State Hospitals for the Insane in that State, and to provide temporary assistance, employment and friendly aid and counsel for needy persons discharged from such hospitals as recovered, and

WHEREAS, In the opinion of the American Medico-Psychological Association, it is very desirable that there should be carried on in connection with all hospitals for the insane such a system of after-care; therefore,

Resolved, That the American Medico-Psychological Association expresses its gratification at the inauguration of this movement in the State of New York, and its earnest hope that similar work may be undertaken for hospitals for the insane generally.

DR. MABON.—I would like, if possible, to have an expression of opinion from such representatives of the different States as care to speak on this subject.

THE PRESIDENT.—This is a very meritorious work and I am sure this Association will feel pleasure in engaging in it. Dr. Mabon presents these resolutions and moves their adoption.

DR. HURD.—It seems hardly necessary to say a single word commending this resolution and I hope it will unanimously prevail. It is worthy the support of every member present. Those who have been connected with the treatment of the insane must have been distressed many times by the fact that patients discharged wholly recovered from the institutions often relapse and come back to them because of lack of suitable care and friendly counsel and aid at a time when these may be critically needed. For this reason, it seems to me that no more important subject has ever been brought before the Association than the best methods for promoting the after care of such patients. I have great pleasure, therefore, in seconding this motion, which I hope will be adopted.

DR. BURGESS.—I am heartily in agreement with this resolution. Scarcely a week passes but that I have one or more patients who might be discharged if we had some one to look after them and encourage them. But as it is they are sometimes held weeks or months after they could be discharged because they have no one to help them. It seems to me the women who are discharged could be assisted greatly by the women of Montreal, but unfortunately, those who have been discharged are neglected, if not worse, by the members of their own sex.

It is the same with the men. They can get no employment; there is no one to give them a helping hand. If we had a society of this kind in our Province, I feel sure it would do a world of good. I heartily endorse the resolution offered by Dr. Mabon.

DR. GORDON.—Dr. Hurd spoke about those going home and Dr. Burgess spoke about people that apparently did not have any homes. This work, as I understand it, is simply for those that are homeless.

DR. MABON.—Not at all. Some, indeed, many, have homes that are not very suitable. The State Charities Aid Association has organized a committee to undertake the work and this committee has, as an agent, a trained nurse to investigate every case. This nurse receives from the institution a list of patients about to be discharged, if possible, some time in advance of the discharge. Then she visits the homes of these patients, sees what the conditions are, and if they are unsuitable, so reports and attempts to make suitable arrangements by which the individual patient may be provided with sufficient food, clothing and if possible employment, or such other means as may be necessary to tide the individual over the critical period after discharge.

For those who have no homes, board is provided in private families until occupation is secured. Furthermore, if the patient should appear to be relapsing after two or three weeks, the nurse reports the fact to the institution and effort is then made to see the patient and have him returned to the hospital before there is a full return of the mental trouble.

Indeed, the general idea is oversight for all worthy patients and doing everything possible to provide against those conditions which oftentimes bring about a relapse.

DR. TOMLINSON.—Last year at the National Conference of Charities and Correction at Portland, Oregon, the subject of the after care of the insane was considered in the section of which I was chairman. This consideration, however, did not go beyond the general discussion of the subject. Later in the year, the subject of the after care of the insane was taken up in the State conference in Minnesota, and a tentative plan formulated somewhat like the plan recently adopted in New York.

It is the intention to get philanthropic people in every community interested in the welfare of patients discharged from the custody of the hospitals for the insane, and have them look after these people, helping them to start in the world again. The institution is to furnish the patient a letter of introduction, and the committee a synopsis of the history of the individual; so that his weakness and special tendencies may be known, and therefore guarded against. It will be the function of the different members of this committee to keep track of the individual, encourage him, and guard as far as possible against a recurrence of his mental malady.

Aside from the mental weaknesses to be guarded against in the individual, it is often necessary to protect him from his relatives; especially if he has property, and the relatives have profited financially by his absence from home.

DR. BLUMER.—I have never been more strongly impressed with the usefulness of the order "unfinished business" in our Association than this morning, when such a matter as the after care of the insane is brought up by Dr. Mabon and now promises, after so many years, to be carried to a successful issue. I hope the motion of Dr. Mabon will prevail. For my part, I shall be very glad to do all that is possible to make the proposition of after care known to the proper authorities in the State of Rhode Island.

While we are very much indebted to the mover for what he is doing in this great cause, I think it only fair that we should recognize the part played by Miss Louisa Lee Schuyler, of New York. That lady deserves to rank with Miss Dorothea L. Dix in the great work she has done for the insane, not only in New York State, but throughout the United States. Without Miss

Schuyler, the State Care Act in New York never would have been passed, or, at least, its passage would have been greatly delayed, and so long as she, through the State Charities Aid Association, is willing to undertake this work in conjunction with the State Commission in Lunacy we ought all, I think, to rejoice that, after thirteen years of talk, we are likely to have an after care association.

THE PRESIDENT.—These resolutions are before you for action. The resolutions were adopted unanimously.

The report of the Auditors was submitted by Dr. Hancker:

BOSTON, MASS., June 13, 1906.

To the American Medico-Psychological Association:

Your Auditing Committee would respectfully report that it has made a careful examination of the books and accounts of the Treasurer, compared the receipts, disbursements and vouchers for same, and the funds on hand and in bank, and find that the report submitted by him is a true statement of the financial condition of the Association.

We have also in like manner examined the statement as submitted of receipts and disbursements by the editors of the American Journal of Insanity and find the report as presented to the Association correct.

Very respectfully,

(Signed) WM. H. HANCKER,
B. M. CAPLES,

Auditors.

I would like to make the suggestion, if it meet with the approval of the Association, of the necessity of changing the Constitution on account of the amount of work devolving upon the Auditors. Any one who has been an Auditor and who has performed his duties in a satisfactory manner, finds that the time taken up by that work requires from four to five hours. I would request that a resolution be introduced at this meeting, so it can be acted on next year, increasing the number of Auditors to three, electing one for one, one for two, and one for three years, and electing one annually thereafter, to hold office for three years, so that when an Auditor drops out, there will be some one who is familiar with the work. I hope some member will introduce a resolution to this effect.

The report of the Auditors and Treasurer was then received, adopted, and placed on file.

THE PRESIDENT.—It would seem to be a favorable time to carry out this suggestion, if any one cares to make the motion.

DR. J. C. CLARK.—I offer the following amendment to the Constitution:

Article 4, third line: Substitute the word "three" for "two" before the word "auditors."

Amendment to Article 8, second paragraph, ninth line: Insert after the word "elected," "One auditor shall be elected for one year, one for two years, and one for three years."

THE PRESIDENT.—This proposed amendment to the Constitution will lie upon the table until the next annual meeting.

DR. TUTTLE.—I would like to call the attention of the Association to the fact that there is an exhibit of the Massachusetts State Hospitals in the old Medical School building, Boylston street, corner of Exeter. The Medical School building is against the back of the Public Library.

One other thing. There appears to be some misunderstanding in regard to the invitation to Waverley. Of course all the ladies are expected to go, as well as members of the Association.

Dr. C. P. Bancroft, Concord, N. H., then read a paper, entitled, "Women Nurses on Men's Wards."

THE PRESIDENT.—The discussion of these nursing papers will take place at the end of the symposium. The Chair does not wish to be in the position of interrupting speakers unless it is the desire of the Association to have the twenty-minute rule enforced. What is the will of the Association?

DR. BLUMER.—I hope, Mr. President, you will be encouraged in the effort to enforce the rule. I think on an occasion like this, while we may love the members much, we should love the Association and its rules more. I, for my part, desire to offer my support and hope the President will succeed in his effort to be thoroughly vertebrate.

DR. WORK.—I move that the Chair be instructed to strictly enforce the twenty-minute rule.

The motion of Dr. Work was duly seconded and carried.

Dr. George T. Tuttle, Waverley, Mass., read a paper entitled, "The Male Nurse."

Dr. C. R. Woodson, of St. Joseph, Mo., read a paper entitled, "Night Nurses for the Insane."

Dr. Edward B. Lane, Boston, Mass., read a paper, "The Training School in the Insane Hospital."

The paper of Dr. W. P. Crumbacker, Independence, Iowa, "Musings Concerning Nurses in Hospitals for the Insane," was read by title.

The symposium on nursing was discussed by Drs. Stockton, Lyon, Cowles, C. K. Clarke, Burgess, Tomlinson, W. A. White, C. G. Hill, E. H. Howard, Hughes, Zeller, and by Drs. Bancroft, Tuttle, Woodson, and Lane in closing.

DR. W. A. WHITE.—I move that the President appoint a committee of three, to be known as the Committee on Training Schools, whose duty shall be to prescribe a minimum requirement in a course of study in training schools for nurses in hospitals for the insane and that the diplomas issued by those hospitals which, in the judgment of the committee, satisfy the requirements, shall be accepted in other hospitals for the insane.

The motion was duly seconded and carried.

THE PRESIDENT.—The Chair will appoint the committee later.

The report of the Nominating Committee was read by Dr. Richard Dewey, as follows:

For President, Dr. Charles G. Hill, of Maryland.

For Vice-President, Dr. Charles P. Bancroft, of New Hampshire.

For Secretary and Treasurer, Dr. Charles W. Pilgrim, of New York.

For Councilors, Dr. P. L. Murphy, of North Carolina; Dr. Wm. A. White, of Washington, D. C.; Dr. Robert H. Chase, of Pennsylvania; Dr. H. C. Eyman, of Ohio.

For Auditors, Dr. Geo. F. Edenharter, of Indiana; Dr. J. Percy Wade, of Maryland.

(Signed) RICHARD DEWEY,
EDWARD COWLES,
T. O. POWELL.

Upon motion the report of the committee was accepted and the Secretary was instructed to cast the ballot of the Association for the election of the officers named by the Nominating Committee.

THE PRESIDENT.—The Secretary announces that the ballot has been cast. These gentlemen will constitute the officers of the Association for the coming year. The Councilors and Auditors assume their offices at once.

The Association took a recess until 2.30 p. m.

SECOND SESSION.

The Association was called to order by the President at 2.30 p. m.

THE PRESIDENT.—I have just received notice of the death of Dr. George I. McLeod, of Pennsylvania. A memorial notice will be prepared for insertion in the next volume of the Transactions.

Dr. Samuel B. Lyon, White Plains, N. Y., read a paper, "Mis-carriage of Habeas Corpus Proceedings," which was discussed by Drs. Mabon, Blumer, and by Dr. Lyon in closing.

Dr. George A. Smith's paper, "Colony System in New Hospitals for the Insane," was read by title.

Dr. Owen Copp, Boston, Mass., read a paper entitled, "Further Experience in Family Care of the Insane" which was discussed by Drs. Hurd, G. H. Hill, Pilgrim, McBride, Dewey, and Dr. Copp in closing.

A paper by Dr. Everett Flood, Palmer, Mass., "An Institution Composite," was read by title.

Dr. J. Clement Clark, Sykesville, Md., read a paper, "European Hospitals for the Insane."

DR. LANGDON.—The paper I read will have the merit of brevity and is simply an abstract of some investigations which we have in progress at the Cincinnati Sanitarium and simply announces the general results, so far as they have gone. The title is, "Paresis; A Research Contribution to its Bacteriology."

Dr. Langdon's paper was discussed by Drs. Eyman, Woodson, and by Dr. Langdon in closing.

THE PRESIDENT.—It seems to me the appointment of a Committee on Resolutions should be made at once. What is the pleasure of the Association?

The President was thereupon authorized by motion to appoint a Committee on Resolutions consisting of three members.

THE PRESIDENT.—The Chair will appoint as such committee, Drs. Hurd, Mosher, and McBride.

It seems to me in looking the matter over that the committee proposed by Dr. White this morning for considering the curricula of training schools, etc., should be larger. There is so much good material to enter into its composition that I am very much in favor of enlarging the committee to five, if this meets with the approval of the Association.

On motion the President's suggestion in this matter was adopted.

THE PRESIDENT.—I will appoint as such committee, Drs. W. A. White, C. P. Bancroft, G. T. Tuttle, Arthur W. Hurd, and C. K. Clarke.

DR. C. G. HILL.—Last year a committee was appointed on program to arrange the program for the coming session. I think that was intended to be permanent. I have not heard any report of the committee. I would like to know whether that becomes permanent, or whether temporary.

THE PRESIDENT.—The Secretary states that the committee was for the present year only.

DR. C. G. HILL.—I move that a committee of five be appointed to arrange the program for the next meeting. I think the committee did very valuable work this year. I think a committee representing the different sections of the country would be best. I move that the committee be appointed by the Chair.

Dr. Hills motion was duly seconded and carried.

THE PRESIDENT.—The Chair will ask Dr. Hill to suggest the members of that committee at a later meeting.

DR. MURPHY.—I move that when we adjourn to-night, it be to meet at 9.30 to-morrow morning.

Dr. Murphy's motion was duly seconded and carried.

The Association took a recess until 8.30 p. m.

EVENING SESSION.

The meeting was called to order by the President at 8.30 p. m.

Dr. Walter G. Chase, Boston, Mass., gave an illustrated lecture, "Biographic Representation of Various Phases of Epilepsy, Athetosis, Gait of Paretics, etc."

THE PRESIDENT.—You have listened to this remarkably interesting demonstration by Dr. Chase. What is the pleasure of the Association?

DR. WAGNER.—Mr. President, I think the Association is under very great obligations to Dr. Chase and I move that a vote of thanks be tendered him for the entertaining and very instructive lecture which he has given us.

THE PRESIDENT.—I am sure that motion will meet with your approbation. I will call for a rising vote. Carried unanimously.

I have pleasure in saying, Dr. Chase, that this is unanimous. We are very much indebted to you.

Adjourned.

THURSDAY, JUNE 14, 9.30 A. M.

The following reports of the Council were read by the Secretary:

The Council recommends the following named physicians for active membership:

Frank L. Keith, M. D., Farmington, Mo.; William McDonald, M. D., Providence, R. I.; Daniel H. Calder, M. D., Provo, Utah.

The following applications for active membership were considered informally and final action deferred until next year in accordance with the Constitution:

W. W. Faison, M. D., Goldsboro, N. C.; Robert L. Gillespie, M. D., Portland, Ore.; Florence Hale Abbot, M. D., Taunton, Mass.; Eben C. Norton, M. D., Norwood, Mass.; Oscar R. Long, M. D., Ionia, Mich.; H. Louis Stick, M. D., Worcester, Mass.

THE PRESIDENT.—The names of physicians proposed for active membership will be voted upon to-morrow as provided in the Constitution.

The Council has appointed the following named physicians as a committee to confer with a similar committee of the British Medico-Psychological Association and endeavor to arrange a conjoint meeting of that Association with this Association two years hence, and to report at the next meeting of this Association: Dr. A. E. Macdonald, Chairman; Dr. Chas. P. Bancroft, Dr. Chas. W. Pilgrim, Dr. Edward N. Brush, Dr. T. J. W. Burgess.

On motion this portion of the report was accepted and adopted.

The Council recommends that the Association meet in Washington, D. C., next year in conjunction with the Congress of American Physicians and Surgeons, not to exceed three days, and that the balance of the time devoted to the annual meeting be spent in Norfolk, Va.

The following named physicians constitute the Committee of Arrangements: Dr. William A. White, Chairman; Dr. William F. Drewry, Dr. L. S. Foster, Dr. J. Clement Clark, Dr. Stewart Paton.

The Council recommends that the dues for the coming year for active members be five dollars and for associate members two dollars.

The Council recommends the appropriation of \$300.00, or as much thereof as may be necessary, to the American Journal of Insanity.

On motion, the various recommendations of the Council were accepted and adopted.

DR. C. W. PAGE.—I would like to make a report. At the last annual meeting a committee was appointed, of which committee I was chairman, to procure a suitable testimonial to present to Dr. Henry M. Hurd in recognition of his services to the Association. I wish to report that the committee selected a loving cup and that cup was presented to Dr. Hurd several months since by a sub-committee, Dr. Hill, of Baltimore, being the chairman.

The report was accepted.

Dr. Richard Dewey, Wauwatosa, Wis., read a paper entitled "Some Suggestions for Construction of Small Psychopathic Hospitals, with a Sketch of Plans."

Dr. Dewey's paper was discussed by Drs. Bancroft, Searl, C. K. Clarke, and by Dr. Dewey in closing.

The following papers were read:

"The History and Use of the Term Dementia," by G. Alder Blumer, M. D., Providence, R. I.

"The Clinical Aspects of Paretic Dementia with Special Reference to Differential Diagnosis, etc.," by Dr. Irwin H. Neff, Pontiac, Mich., read by title.

"Dementia," by Dr. James T. Searcy, Tuscaloosa, Alabama.

"Experimental Studies in Dementia," by Dr. William McDonald, Jr., Providence, R. I.

DR. McDONALD.—If I plead guilty to a small part of that in Dr. Blumer's paper which he has been kind enough to charge against me, I must insist that there has been reciprocal aid and I am delighted to find here the opportunity to acknowledge publicly my great indebtedness to him for his constant support and encouragement in the labors to which I refer briefly in the paper about to be read. I have only to state that he has patiently read and helpfully criticized more than 150 typewritten pages of preliminary notes besides having co-operated with enthusiasm in the clinical experiments forming the basis of the written observations.

I also wish to acknowledge my obligations to my colleague, Dr. Hall, for valuable assistance rendered during the progress of the work.

"The Prognosis and Treatment of Dementia," by Dr. Charles K. Clarke, Toronto, Ontario.

DR. CLARKE.—When I was asked to take part in this discussion, I regarded it as a great compliment until I began to think of the matter seriously, when I discovered that some enemy had wished me to write a book. The effort to condense this to a twenty-minute article has been a task that might easily be called herculean.

THE PRESIDENT.—Personally, I feel very much indebted to these authors for their excellent articles.

The symposium on dementia was discussed by Drs. Coriat, Hughes, Meyer, H. W. Miller, and by Drs. Blumer, Searcy, McDonald.

SECOND SESSION.

At the McLean Hospital, Waverley, Mass.

The Association was called to order by the President at 2.45 p. m.

The following papers were read:

By Dr. John T. W. Rowe, Ward's Island, New York City, "Is Dementia Praecox the 'New Peril' in Psychiatry?"

By Dr. Sanger Brown, Chicago, Ill., "Precocious Insanity," (by title).

By Dr. Chester L. Carlisle, Willard, N. Y., "Maniacal Conditions in Young Adults."

By Dr. Walter E. Fernald, Waverley, Mass., "The Moral Imbecile," (by title).

DR. PILGRIM.—Owing to the large number of papers, I will read my paper, "Insanity and Suicide," by title.

By Dr. David A. Shirres, Montreal, Quebec, "A Report of a Case of Feigned Insanity in a Murderer," (by title).

By Dr. Gershom H. Hill, Des Moines, Iowa, "Three Cases to Illustrate Mental Irresponsibility for Crime," (by title).

By Dr. Chas. A. Drew, State Farm, Mass., "Some Problems in Psychiatry and Penology," which was discussed by Dr. G. H. Hill.

THE PRESIDENT.—I am sure we are much indebted to the authors for these excellent papers this afternoon.

The Association now stands adjourned to meet this evening at 8.30. After Dr. Clark's lecture, Mr. John Koren, an expert of the United States Census Bureau, will speak on the subject of a more uniform system of statistics for the insane hospitals of the country.

THIRD SESSION.

The Association was called to order by the President at 8.30 p. m.

Dr. L. Pierce Clark, New York City, gave an illustrated lecture, "Idiocy, Hysteria and Palsy in Classical Pictorial Art."

THE PRESIDENT.—Dr. Clark, we are very much indebted to you for this delightful lecture.

On motion, a vote of thanks was tendered Dr. Clark.

By request of the President, Dr. Adolf Meyer, Director of the Pathological Institute, Ward's Island, New York City, continued a discussion of the papers on dementia and gave demonstration of the methods of work of the New York State Pathological Institute.

THE PRESIDENT.—I will not ask for a discussion of this subject. Dr. Meyer will be glad to answer questions, I know. We certainly owe him thanks for the demonstration this evening and I know I voice the sentiment of the Association in tendering them.

Mr. John Koren, an expert in the Census Bureau of the United States, was introduced.

MR. KOREN.—I have no excuse for being here, except that I had charge of the last Federal enumeration of the insane and had correspondence with most of the members of the Association.

Mr. Koren then read a paper entitled, "Statistics of the Insane."

THE PRESIDENT.—We feel very much indebted to Mr. Koren for his talk to us to-night. What is the pleasure of the Association?

DR. WM. A. WHITE.—I think Mr. Koren does not know it was largely through a visit I made to the Census Bureau that resulted in his being here to-night.

The statistics of insanity for the past two censuses have been interesting and I called upon the Bureau to see if the statistics were in for this last census. One of the gentlemen took me through and showed me the various tabulated statements about to go to press. I was struck with the fact of the almost entire lack of uniformity in the reports of the different institutions. I

could see very readily how the great mass of data might be and was in some instances absolutely ruined by there being no uniformity of procedure in the hospitals, so that the Bureau was handicapped to a great extent in dealing with them.

Mr. North, Director of the Census, told me the census returns were woefully behind the returns on the Continent.

It struck me it would be an excellent idea to have Mr. Koren, who is a resident of Boston, drop in and tell us something about this, and it would be an excellent thing to have this Association take the initiative in the endeavor to help the Census Bureau by providing them with statistics along the line which Mr. Koren has designated.

I believe it would be very desirable for the Association to appoint a committee to deal with this subject and operate in conjunction with the Census Bureau, advise with them and be able to place at the disposal of this Association and the different institutions the results, and give us material and information which is not only valuable, but presents studies of the problems which are arising in a country which is receiving so many of the off-scourings of Europe.

I move, Mr. President, that the Chair appoint a committee of five, to deal with the subject as I have suggested, and that this committee should be representative of the different sections of the United States.

Dr. White's motion was duly seconded and carried.

MR. KOREN.—I might state that the last report of the Census Bureau regarding the insane in the United States is in press and will be published in a month or two. I have made arrangements to have a copy presented to every institution, public or private, represented in that book. We would be very glad to receive any criticisms or complaints, or any suggestions for future work of this kind.

THE PRESIDENT.—The Chair will appoint as this committee to co-operate with the Census Bureau the following: Dr. William A. White, Chairman, Washington, D. C.; Dr. William F. Drewry, of Virginia; Dr. Edmund A. Christian, of Michigan; Dr. James H. McBride, of California; Dr. Ernest V. Scribner, of Massachusetts, and Dr. Adolf Meyer, of New York City, as advisory member.

In this connection, I might add that Dr. White has expressed a wish to withdraw from the Committee on Training Schools. If there is no objection, the Chair will fill the vacancy caused by his retirement by the appointment of Dr. William L. Russell, of New York, and will appoint Dr. George T. Tuttle, of Massachusetts, as chairman of the committee.

On motion, the appointments of the Chair were confirmed.

Adjourned.

FRIDAY, JUNE 15, 9.30 A. M.

The Association was called to order by the President at 9.30.

THE PRESIDENT.—The first order of business is the election of the candidates proposed by the Council yesterday. The Secretary will read the names.

The Secretary read the following: Dr. Frank L. Keith, Farmington, Mo.; Dr. William McDonald, Jr., Providence, R. I.; Dr. D. H. Calder, Provo, Utah, as candidates for active membership.

On motion the Secretary was directed to cast the ballot of the Association electing these gentlemen as members of the Association.

THE PRESIDENT.—The Secretary announces that the ballot has been cast and I therefore declare these physicians members of the Association.

DR. A. E. MACDONALD.—There has been some misunderstanding with regard to the committee to consider the relations of this Association with the Congress of American Physicians and Surgeons. The committee was discharged in the absence of myself, the chairman, and other members of the committee, the impression being, as I have been informed, that I would not attend this meeting, whereas my letter to the Secretary stated only that I could not attend until the third day of the meeting.

I rise to a question of privilege and ask that, inasmuch as, through this misunderstanding, the committee has not been heard from, some member who voted for the discharge of the committee will kindly move a reconsideration so that the committee can make its report.

DR. BLUMER.—I move that the action of the Association in discharging this committee be reconsidered.

Dr. Blumer's motion was duly seconded and carried.

DR. A. E. MACDONALD.—As chairman of that committee, Mr. President, I have now to report that a meeting was held yesterday, a majority, Drs. Burgess, Work, and myself being present. The object of the committee's appointment was to enquire as to the relations with the Congress and to advise this Association whether that relation should continue or not. There was some trouble about the method of the collection of the share of this Association in the expenses of the last meeting. The rule provided that each constituent association should be taxed its proportion of the expenditure, in proportion again to the membership of such individual association.

In the case of the last meeting, however, it was assumed by the officers of the Congress that every member of an association who attended his own association meeting was thereby made a member of the Congress and was expected to pay to the Congress an additional fee of five dollars.

This was not understood by our members. A great many thought that membership in the Congress was optional and did not pay this fee, and as a consequence, afterward there was a deficit and the Association was taxed two hundred dollars to make it good.

The committee thinks that the rule should be enforced in a different way; that after the liability of each constituent society is determined, it should be left to that individual society to decide in what way that assessment should be paid, whether out of the funds of the association, whether by individual subscription, or in any other way that the association should elect.

The committee's report, and recommendation, then, is that the relations now existing be continued, at least until the next meeting, at which time we will all be better qualified to judge of the value of the alliance.

The committee further recommends to the Association that its member of the Executive Committee of the Congress be instructed to advocate in that committee a method of collection of

the regular assessment, which will leave the decision of the exact manner in the hands of the Association itself.

DR. BLUMER.—Mr. President, I move the adoption of the report and the discharge of the committee.

Dr. Blumer's motion was duly seconded and carried.

DR. A. E. MACDONALD.—Mr. President, I have another committee to report for, that upon the responsibility of the insane for criminal acts. At the last meeting, as you will remember, the committee was continued and I, as chairman, was instructed to communicate with the American Bar Association and endeavor to secure the appointment of a similar committee from that Association, so that the question could be considered in common and a general report made, if possible, at the Washington meeting next year. I have held such correspondence and have every reason to think that the joint committee will be appointed. I therefore report progress and ask the committee's continuance.

On motion, the report was accepted and the committee continued.

DR. A. E. MACDONALD.—Mr. President, I have still another report to make. I have just returned from Lisbon, where I attended the Fifteenth International Medical Congress as your representative. I have not had time since my return to prepare a detailed report. I will ask you to accept my verbal report as to the fact of my attendance and permit me to make the formal report through the agency of the American Journal of Insanity.

I learn that prior to my arrival at this meeting, you have done me the honor of selecting me as your representative at the British Medical Association meeting this year in Toronto. I desire to thank you very kindly for this continued confidence and trust in myself as your representative.

On motion the report was accepted and placed on file.

Dr. S. C. Fuller, Westborough, Mass., read a paper, "The Neurofibrils in General Paralysis of the Insane, with Similar Comparative Studies in Other Psychoses," which was discussed by Drs. H. W. Miller, and by Dr. Fuller in closing.

Dr. Henry C. Baldwin, Boston, Mass., read a paper, "The Similarity in Symptoms in Cases of Tumor of the Brain and General Paralysis." At the close of his paper, Dr. Baldwin exhibited two patients as illustrating certain points of his paper.

THE PRESIDENT.—We owe Dr. Baldwin thanks for this clinic, so unusual in this Association. This most interesting paper is now open for discussion.

Dr. Baldwin's paper was discussed by Drs. Coriat, Blumer, and by Dr. Baldwin in closing.

"Family Epilepsy," by Dr. W. P. Spratling, Sonyea, N. Y., was read by title.

Dr. M. L. Perry, Parsons, Kansas, read a paper on "Status Epilepticus," which was discussed by Drs. Coriat, Hughes, and by Dr. Perry in closing.

"Some Observations on the Medical Treatment of Insanity," by Max E. Witte, M. D., Clarinda, Iowa, was read by title.

Dr. Edward French, Harding, Mass., read a paper on the "Condition of the Heart in Dements," which was discussed by Dr. Hughes.

A paper on "Cerebral Arterio-Sclerosis" was read by Dr. James B. Ayer, Boston, Mass.

"Mal-Assimilation as a Causative Factor," by Dr. J. Frank Edgerly, Newtonville, Mass., was read by title.

"The Care of the Tubercular Insane at the Kings Park State Hospital," by Dr. John Irvine McKelway, Kings Park, N. Y., was read by title.

The following papers were read:

"Clinical and Pathological Report of a Case of Addison's Disease, with Terminal Mental Symptoms," by Dr. Harry W. Miller, Taunton, Mass.

"The Cerebellar-Vestibular Syndrome," by Dr. Isador H. Coriat, Worcester, Mass.

Dr. Coriat's paper was discussed by Dr. Hughes.

"Hysterical Insanity—Report of a Case Presenting Ganser's Symptom Complex," by Dr. Henry P. Frost, Buffalo, N. Y., was read by title.

"The Polyneuritic Psychosis or Korsakoff's Disease with Clinical and Pathological Reports of Two Cases," by Chas. K. Mills, M. D., and A. Reginald Allen, M. D., of Philadelphia, Pa., was read by title.

"The Opium Habit and Why Its Victims Are Growing More Numerous," by Dr. B. D. Evans, Morris Plains, N. J., was read by title.

"Recent Methods in the Care and Treatment of the Insane," by Dr. George B. Campbell, New York City, was read by title.

"Contribution to the Study of the Heredo-Alcoholics," by Dr. E. P. Chagnon, Montreal, Quebec, was read by title.

The following paper was read:

"Curable Neurasthenic Senile Dementia," by Dr. C. H. Hughes, St. Louis, Mo.

DR. HUGHES.—The purpose of this paper is to establish a point. I sent in my proposition to write a paper so late that I did not suppose I would find any space at all on this program. I wish to make this point, however, because I consider it from my own experience a vital one. The title is "Neurasthenic and Functional Dementia of Seniles."

A paper on "Melancholia and Mania" was read by Dr. Edward Cowles, Boston, Mass.

Memorial notices were read by title, as follows:

Dr. Emmet Cooper Dent, by Wm. Austin Macy, M. D.

Dr. Benjamin Blackford, by William F. Drewry, M. D.

Dr. Henry P. Stearns, by Shailer E. Lawton, M. D.

Dr. William M. Edwards, by C. B. Burr, M. D., and Herman Ostrander, M. D.

Dr. Charles H. Langdon, by Charles W. Pilgrim, M. D.

Dr. D. D. Richardson, by Morris Guth, M. D.

The Committee on Resolutions reported as follows:

The Committee on Resolutions suggests that the Association recognize by a vote of thanks appreciation of the care taken by the Committee of Arrangements in preparing a most agreeable and pleasant meeting; and that this action include the officers of the McLean Hospital for the entertainment of Thursday afternoon, by which opportunity was given for the inspection of this progressive and beautiful institution. The committee feels particularly that Dr. Tuttle, in his dual capacity of host at the McLean Hospital and the resident member of the Committee of Arrangements has earned the gratitude of the Association.

The comfort of the members was much increased by the proprietors of the Hotel Vendome placing a meeting room at their disposal and also in arranging a special dining room for their convenience and our thanks are tendered for these and many other attentions.

(Signed) HENRY M. HURD,
J. M. MOSHER,
JAS. H. MCBRIDE.

On motion, the report of the Committee on Resolutions was accepted and adopted.

THE PRESIDENT.—The introduction of the President-elect is the next in order. I would request Dr. Macdonald and Dr. Burgess to escort Dr. Hill, the incoming President, to the Chair. (Applause.)

It is a work of supererogation to introduce to this Association one so well known and so popular as my friend at the right. It is, however, one of the requirements of this office and I accept the pleasant duty. It becomes my privilege and pleasure to yield this gavel to one worthy to wield it and to bespeak for him the same courtesy and degree of consideration which I have received.

Members of the Association, permit me to present to you our silver-haired and silver-tongued orator and friend, Dr. Charles G. Hill, President-elect. (Applause.)

DR. HILL.—My words fail me when I attempt to express my feelings, and my very high appreciation of this great honor con-

ferred upon me. When I count the long list of predecessors, the long list of distinguished men who have occupied this place, some living, many dead, I feel every sense of my responsibility and also very deeply this distinction which you have given me.

I am sure you have something to say in regard to our retiring President, so courteous, so affable, so efficient in his administration, and so popular to this entire body. Any motion you have to make will be in order.

DR. HUGHES.—I move that the thanks of this Association be given to the retiring President for the very satisfactory manner in which he has conducted the affairs of the Association.

Dr. Hughes' motion was duly seconded and carried unanimously by a rising vote.

THE PRESIDENT.—Is there no further business before the Association?

DR. BURGESS.—I think it also behooves us to give a cordial vote of thanks to our Secretary for the courteous way he has performed his duties and the time he has given to the affairs of the Association.

DR. BURR.—And to the Program Committee also.

The suggestions of Drs. Burgess and Burr were incorporated in a motion which was carried unanimously.

DR. BURR, in response to a call to make a few remarks, said:

I fear, Mr. President, the Association has already heard from me too much, but I do appreciate from the bottom of my heart the honor you have paid me in the election for a number of years as Secretary and for the later honors of election to the offices of Vice-President and President. It has been a great privilege to serve the Association in these various capacities. I have enjoyed the work and I feel under no end of obligation for your courtesy to me, your kindness, your forgetfulness of my shortcomings, and your consideration for me, particularly during this late meeting. I thank you, Mr. President and gentlemen. (Applause.)

THE SECRETARY.—Gentlemen, I can only say that I thank you very much for the confidence you have imposed in me. If I can

only perform the duties assigned to me one-half as well as my lamented predecessor, Dr. Dent, I shall be happy indeed.

THE PRESIDENT.—The Program Committee for the coming year will consist of the following members:

William L. Russell, M. D., Chairman, Poughkeepsie, N. Y.

Harry W. Miller, M. D., Taunton, Mass.

James V. Anglin, M. D., St. John, N. B., Canada.

William H. Hancker, M. D., Farnhurst, Del.

Arthur F. Kilbourne, M. D., Rochester, Minn.

Gentlemen, if there is no further business before the Association, it now stands adjourned to meet in Washington and Norfolk at a time to be announced later by the Secretary.

CHARLES W. PILGRIM,
Secretary.

PRESIDENTIAL ADDRESS.

THE PHYSICIAN AS A CHARACTER IN FICTION.

By C. B. BURR, M. D.,
Medical Director Oak Grove, Flint, Mich.

"Medicine is one of those professions that demand talent and bonheur but more of the latter than of the former."

Choosing a subject for one's presidential address may be safely recommended as a holiday pastime in the sense that the holiday time may all be passed in the effort and because of the vivid suggestion during that blissful season of brooks and things that babble. To control the surging billows and harness the tides of thought may be difficult in dog days but at the very worst a midsummer's madness may be welcomed in preference to an all winter's despair. Until this matter is settled one's efforts to work will be abortive, his outlook upon the world obscured by the ever-nearing fog of apprehension, and his relations with himself in high degree uncordial and depreciatory. Verily, to one haunted by the spectre of this duty neglected

The sky is an inkstand upside down
That scatters the world with its gloom.

It is the prerogative of presidents to survey the field of operation, to study the accomplishment of the past and to forecast the future, but in contemplating the picture from a prejudiced viewpoint, one may lose something of the sidelights or miss an important perspective. Optimism may arise from the clannish estimate determined by our professional relation. The less partial judgment of the lay writer is necessary to enable us to "see ourself's as ithers see us."

The physician is not in many instances the leading character in works of fiction, or so to speak, in the limelight of the story. We who have a fuller appreciation of his daily walk, his work and worries, his dreads and doubts, his successes and his failures, have marvelled perhaps that he has not found his way into

fiction more frequently. His life is a tragedy, his daily round a romance. The pendulum of his emotions is always in extreme oscillation. There come to him the deepest griefs, the heaviest burdens, triumphs that exalt his self-appreciation to the danger point, reverses that engulf him in the abyss of misery and stamp humiliation upon the page reserved for the record of successful effort. He battles constantly with unseen foes, he wins in engagements where indications all point to the imminence of surrender, and he loses battles entered upon with high optimism and carried forward to a point which seems to assure the speedy lowering of the enemy's standard. His best work necessarily fails of appreciation by the lay mind and the successes which have brought worldly favor and recognition are not rarely achieved through conditions in which superlative merit was lacking and fleet-footed fortune distanced deserving.

While as might be expected, there is often failure on the part of the lay novelist to appreciate the refinements of medical ethics and medical doctrines, one might look far for loftier ideals and more comprehensive views of the mental and moral equipment desirable in a physician than those displayed in MacLaren's "Bonnie Brier Bush;" in Balzac's "Country Physician," or in Sarah Orne Jewett's "Country Doctor."

Stories such as these and the lines quoted by Scott from Samuel Johnson, in his preface to "The Surgeon's Daughter," emphasize the importance to the daily life of the household of the old-time family physician, and though the specialist, particularly the surgeon, has had a measure of appreciation, it is the family physician to whom the highest meed of praise has been accorded.

Intuitive knowledge of disease and ability to act promptly in emergencies so well exemplified in the person of Dr. Leslie are priceless possessions of the physician. Indeed, many of our faith will hold with the author of "The Country Doctor," that lacking such instinct the highest measure of success in practice is never attained.

Dr. Anther in "The Son of Royal Langbrith," and Cable's "Dr. Sevier" are of the same type. Dr. Anther was the loyal lover of Royal Langbrith's widow. He deeply resented the tyranny which she had secretly endured from her late husband

but consciousness of the possible imputation of selfish motives led him to refrain from communicating to her coxcomb of a son, the true facts concerning the unworthy parent whom he had ignorantly idealized. At the widow's request he participates in a public ceremony in the father's honor, not, however, without previously apprising the orators of the true character of the one they were to eulogize, his own moral standards showing out in this matter above those of his brethren of the law and the ministry upon whom the duty of eulogists devolved.

His considerate and fatherly treatment of the daughter of the opium habitué is one of the finest passages in the book. "It's a little disappointing when we've got him so far along, that's all. But it is not a thing to discourage." "He set the bottle aside." "I'll bring it to him and have a talk with him." "Oh, do!" the girl said, back in her gayety again, "your talks do him more good than medicine."

On the whole the picture drawn by Howells of this rugged and honest character is satisfactory. "He kept his precepts for himself, his practices for his patient," ate recklessly and preferred unwholesome things, was tenderly sympathetic toward the young, was moved deeply by resentment, but never erred on the unjust or unfeeling side and through praiseworthy motives renounced a lifetime's dream of happiness through considerations of expediency.

Cable's Dr. Sevier, whose inner heart was all of flesh but whose demands for the rectitude of mankind pointed out like the muzzle of a cannon through the embrasures of his virtues, waged active war against disease. "To fight; to stifle; to cut down; to uproot; to overwhelm; these were his springs of action. To demolish evil seemed the highest of aims." Later years and a better self-knowledge taught him that to do good was still finer and better.

These sentiments have a familiar ring. Who, just out of college but feels himself called upon to denounce errors, ecclesiastical, ethical, medical; how he fares forth, pinning his faith to the dictates of his freshly acquired science and intolerant of the acceptance of any dogma not founded upon that which is demonstrable. He must have the truth then, would prove all things,

must have a reason for the faith within. As time goes on, however, such demonstration grows less and less important. He admits his neighbor's right to opinions, and if not concurring, concerns himself little therewith. His public duty to call the sinner to repentance becomes less and less obvious.

The possibilities that lie in the operation of trephining have been little considered by the novelist, and not in a fashion to indicate any depth of study as to the conditions for which such an operation may be undertaken. Balzac in *Catherine de Medici*, draws a striking picture of Paré, his courage, strength of character, and resourcefulness. In the greatest emergency of his life, however, his judgment seems to have been overborne and we are left in doubt as to just what motives actuated him in his failure to operate upon a supposed cerebral abscess in the case of the young King, Francis II.

Mary Mapes Dodge in a child's story, "Hans Brinker," introduces Dr. Brockman, the most famous surgeon in Holland, in appearance irritable and intolerant, but self-sacrificing and modest at heart as we of a humbler specialty know great surgeons to be. Dr. Brockman discovers the similarity between the case of Hans' father and one operated upon in a highly successful manner by a contemporary. "Did the man live?" asked the assistant respectfully. "I believe he died, but why not fix your mind on the grand features of the case." "You have," said the assistant, "other engagements to-day; three legs in Amsterdam, you remember, and an eye in Brok, and that tumor up the canal." "The tumor can wait," said the doctor reflectively. It did wait, the operation was performed, and fortunately, the patient refused to follow the precedent set by the case cited, living as a testimonial to the skill of the great operator and to consume large quantities of his good victuals and wine, thereby liberally confirming the well known reputation of the scowling surgeon for practical philanthropy.

One's sympathies are strongly enlisted for the unfortunate New England quack of the Pratt Portraits. His mother, Mis' Bennett, came from an "uncommon smart family, the Pratts of Dunbridge," and it was regarded a real "edification" to Anson to be the son of such a woman. She had an ill defined notion that doctrine and

docterin' had more similarity than that of mere sound and gave her son to homeopathy and to the people in imitation of Luther who defied the priests who were "keeping religious docterin' all to themselves." Homeopathy was then just coming into vogue. Among New England housewives who liked to feel themselves equal to any emergency the little wooden cases of bottles filled with palatable remedies were welcome possessions.

Anson, brought up to the spectacle trade, permitted himself to take up homeopathy on his mother's instigation. It seemed strange to the neighbors that he should "suddenly pick up and know so much 'bout people's insides, but they accepted the dispensation on the comfortable theory that homeopathy meant home-made or something of the kind."

Poor Anson was his own worst dupe. He, like Dr. Breen, had always thought of saving life, not losing it, and confronted by a severe case of pneumonia called consultation too late. He stood out for the principles of his "school" for a time but the denunciation of Dr. Morse pierced his very soul. The patient died and from that moment he renounced practice, gave up matrimonial aspirations, took upon himself the care of his dead client's family, lived a saintly life, educated in medicine his patient's son, and eventually died from a malignant disease for which the young surgeon's knife had been used unsuccessfully. He lived a life of self-denial and expiated his fault, meriting the proud distinction conveyed in the eulogistic words of Dr. Morse: "I should feel it an honor if you would shake hands with me."

Howells' Dr. Breen, laboring under the double handicap of homeopathy and femininity, had chosen the work in the intention of giving her life to it in the spirit in which other women enter convents or go out to heathen lands. A disappointment in love led her to believe that she had put away the hopes and pleasures to which a young girl aspires, failing to realize that she could not escape from being a woman by becoming a physician. She finds herself at the outset of her professional career unexpectedly in the medical relation to a giddy guest, a neuropathic consumptive of flirtatious instincts. Her consultation with Dr. Mulbridge over the case of the guest who was really ill and *now* wanted a doctor, resulting in failure to discover a basis for joint medical

care, she abdicates the physician's prerogative and assumes that of nurse. In that capacity she engages the affections of Dr. Mulbridge, who though forceful and usually discreet, fails dismally in love making. His impression that the same vigorous tactics will obtain to win the woman as have been of service in combatting the vagaries of impressionable invalids, receives as it should, a rude shock (any other doctor almost, could have told him better) and the offer of renunciation of the true medical faith in order to win her favor, with his consignment of the State Medical Association to the devil, is a sad confession of weakness in a virile man, caught in love and oblivious to folly.

Dr. Breen, with rare adjustment to a more congenial ordering of things, promptly announces her attachment to a previously rejected suitor, precipitates herself into a pair of coat-sleeved arms open to encircle her and surrenders to a dominating spirit.

Dear old Doctor Sangrado, of Gil Blas, who had acquired a great reputation with the public by a pomp of words, a solemn air and some lucky cures, was the original hydrotherapeutist. Health consisting in his view in the humectation and suppleness of the parts, he advised water in great abundance as the "universal menstruum that dissolves all kinds of salt." He insisted that in small amounts it served only to disentangle the particles of the bile and give them more activity; whereas they should be drowned in a copious dilution. Like some other sanitarians who trust much to water in the treatment of disease, he recommended a vegetable diet and did not approve of eating a bellyful, even of that. To deny the stomach things that were palatable, to bleed and to drench with water constituted the principles of his practice which both in his own view and that of his ambitious student, Gil Blas, was so uniform in results as to inspire the reflection of the latter; "I take heaven to witness that I follow your method with the utmost exactness, yet nevertheless every one of my patients leaves me in the lurch. It looks as if they took a pleasure in dying merely to bring my practice into discredit. This very day I met two of them going to their long home." To which Dr. Sangrado replied that if he were not so sure of the principles on which he proceeded, he should think his remedies pernicious but having written a book extolling frequent bleeding and aqueous

draughts, he would not be willing to change methods and deny his own work.

The shady side of the physician's life is depicted in Zola's "Dr. Pascal" and "Page d'Amour." Dr. Pascal's attempt to solve certain problems in heredity by the study of his own ancestral tree was regarded an offense and profanation by his mother and an old-time servant of the family. He is assisted in the work by his niece and during its progress they discover themselves in love. Forgetful of everything but the object of his devotion he abandons all other interests. Decline and discouragement come and true to his own prediction death by angina pectoris terminates a worthless and unhappy existence. The story is full of tragedy. Stung by poverty, he essayed to obtain money for services long before rendered. His trials in the thankless task will be appreciated by many executors of estates of deceased physicians. An old magistrate whom he had once treated for an affection of the kidneys was first visited. This one explained that he would pay him in October, at which time he expected some money. A septuagenarian paralytic expressed offense that he had been so rude as to send her a note by a domestic and became so vigorous in her criticism of this act of impoliteness that he felt on the defensive and called upon to present excuses for his conduct. One he found suffering from a fever and as impoverished as himself and hadn't heart to formulate any request for money. He was equally unsuccessful with a haberdasher, the wife of an attorney, an old merchant and a broker, all in comfortable circumstances. One had one pretext and another another. There were those who affected not to comprehend him. There remained a marquise, a widow, of an old family, and very rich and avaricious. Her, he had kept for the last. She complained that her tenants did not pay and he received nothing, but she succeeded in obtaining a gratuitous consultation. "And you gave the consultation?" asked Clotilde. "Without doubt. Could I do otherwise?" he replied.

One refreshing sidelight in Page d'Amour is the momentary triumph of the professional spirit over emotional impulsion.

He (Dr. Deberle) entered the room, trembling yet comprehending indifferently what she said. In the chamber at this

hour of the night, in the midst of linen and clothing scattered about, he detected again the odor of verbenas which had affected him so much on the evening when he had first seen Helen dishevelled, her shawl gliding from her nude shoulders. He heard nothing, his passion would not be still. He perceived her neck, her hair. He closed his eyes to resist the temptation to kiss her. His mind filled with foolish desire, he felt the child's pulse in a machine-like manner, yielding to professional habit. The battle was strong, he rested immobile a minute without appearing to know that he held the poor little hand in his own.

"Has she high fever?" the mother asked.

"A high fever you think," he repeated.

The little hand warmed his own. There was silence. The physician awakened in him. He counted the pulse. The flame in his eyes became extinguished. Little by little his face paled. He bent over and regarded the child attentively. Then he murmured. "The access of fever is very violent. You are right." His desire was dead. He had no longer any passion except to be of service to her. All his sang-froid returned. He seated himself and questioned her mother upon the facts preceding the crisis.

Suffering remorse from an unfortunate misstep in early life, Balzac's Country Physician found himself meditating suicide. Not satisfied with the philosophy of Epicurus or that of the Stoics which justified self-destruction under certain conditions, he turned to the Evangelists, whose example of devotion and constancy inspired him with new courage. "One with strength to die, has strength to battle," and to refuse to suffer is not strength but weakness. To lead the life of a hermit in some distant country presented itself as a refuge, but to one of his lofty appreciation of the truth, misanthropy appeared a species of vanity concealed under a porcupine skin and not a Catholic virtue. He gave thought to entering a religious order but cast this aside, recognizing in the monastic life a sort of sublime egotism, unprofitable to anyone and after all but prolonged suicide. "I do not condemn it, sir," he said. "The Church has opened these tombs; they are without doubt necessary to certain Christians, altogether useless in the world. In the end Benassis decided to devote him-

self to soothing the needs of the poor, as does a sister of charity, with a whole community as his sphere of action.

He believed that those able to compensate the physician for his services should in doing this assist him in discharging his duties toward the poor. "But, would it not be proper to arrange about the price?" The price of what?" said the physician. "You cannot entertain me and care for me here without." "If you are rich," replied Benassis, "you will pay well; if not, I ask nothing."

Balzac's writings show an exalted appreciation of the physician. Dr. Minoret in "Ursule Mirouet" is a delightful character.

The danger of misunderstanding the motives of one living a life complicated by the confidences of patients, is well brought out in the story of Dr. Dannz und seine Frau (W. Heimbürg). Frau Dannz believed her husband sentimentally interested in a patient whom he had long known in the intimate association of his own home, where he brought her after convalescence from a suicidal attempt. The illness of his mother furnishes an opportunity for the sometime patient to proffer her services as nurse. The wife attributes her husband's long absences and preoccupation to something more than the illness of his mother, becomes despairing and leaves her home. She subsequently finds herself innocently compromised by the all too obvious attentions of a painter. The husband, through the offices of a busybody friend is apprised of the growing scandal. Nothing could be more admirable than his reception of the news. He refuses to believe it, his own rectitude apparently furnishing him confidence in that of his wife. He will receive no explanation, although she is insistent upon giving it and his magnanimity removes the last vestige of her suspicion.

Paul Bourget poses a difficult medical question as seems to him in "A Matter of Conscience." A young physician sent by his venerated master, Trousseau, to a distant point to minister to a patient suffering from Bright's disease and *in extremis* armed with full direction as to what to do in different emergencies and enjoined to forget that which he sees, hears, and learns at the bedside, is confronted by a request from the invalid to secretly send telegrams to four sons living at a distance to come to his

bedside at once. The wish complied with, he overhears a conversation, excited and denunciatory on the part of the patient, pleading and self-effacing on the part of the wife, in which it appears that the motive for summoning the sons is to denounce the mother in their presence and draw from her a definite statement as to the parentage of one. She declines to give the information sought but her whole manner indicates the crushed, miserable, erring wife returned to her allegiance and thoroughly repentant. A crisis in the condition of the patient follows this interview, terrific uremic seizures appear, and the medical remedies suggested by Trousseau failing to bring about improvement, bleeding suggests itself. The physician feels that consciousness will follow resort to this procedure and that sufficient time will elapse before death to permit the interview with the sons. He heartily deplores this visit. In great pity for the wife and sympathy for the sons whose future is certain to be blighted by the impending revelations, realizing that death can in any event be deferred for but a day or two, he holds parley with his conscience. "Can I be the accomplice in this infamy in prolonging an existence which I know will soon terminate and in doing so cause untold suffering to the miserable wife and these four sons. What of their future, in the army, in diplomacy, in the polytechnic school—" "No, I will not be a party to this hideous work." "After all, the bleeding may accomplish nothing. It may be omitted. There are physicians who discountenance it." "Yes," replied another voice, "but if you were elsewhere caring for some patient what would you do?" and in spite of myself, I responded, "I should bleed." "The old and venerable formula of Trousseau, *nec visa, nec audita, nec intellecta*, suddenly crowded itself into my memory. I should act as if I had seen, heard, or comprehended nothing. My duty as a physician was to the patient, first and last, independently of any other consideration. But what was my duty as a man? Was I not obliged to prevent this abomination? The disease would do its work. But after? I saw in my mind's eye the patient dead and myself returning to my master in Paris and rendering account of my stewardship. He would say to me, 'Have you bled?' I could see the glance emphasizing this question. I felt that it would be physically impossible to endure

it. It would be my own medical conscience that would look at me through these piercing eyes and condemn me." How did he decide? As physicians, you have answered the question precisely as did the story.

Dr. Ox in Jules Verne's story under that title, was a rare old mischief maker. Under pretense of supplying Quiquendone with illuminating gas, he surreptitiously introduces oxygen into the homes and public places of this staid old Flemish town which the unprincipled geographers have left off the map. The first public scandal resulting from this nefarious performance is an altercation between a physician and a lawyer in which the damaging charge, "You do not always measure your words well," is publicly made. Imagine how the old town rocked under such an unprecedented and burning allegation. But this is not the worst. Other quarrels appeared and ambitions developed. Cabbages grew as large as bushes, courtship was shortened from ten years to a few weeks, and the good old measured music gave place to jiggy whirling things whose rhythm caused venerable matrons to lose their heads and become intoxicated with the sentiments of youth. Operas which under the old regime consumed three days in rendering were shortened to eighteen minutes. Litigation with a neighboring province pending for some centuries concerning the depredation of a vagrant cow, occasioned a declaration of war. Animal life was abbreviated by the tremendous output of nerve and muscular force. No one can predict where all this turmoil would have ended had not the doctor's man Friday turned the stop-cock and shut off the supply.

The students of medicine of an earlier generation should be interested in the personality of Dr. Rameau (Ohnet). He had a penetrating glance and his presence inspired immediate confidence. A deep ridge at the root of the nose, gave to his physiognomy a terrifying aspect at times, and its appearance indicating that something had gone askew, was the signal for alarm among the students. He swore at his assistants as a cab driver at his horses. All felt his puissant blows and a sombre joy overcame him in buffeting the presumptuous. As is said by the habitual detractors of genius, it was said of him, that he was a trifle insane and later depression and the renunciation of medicine would seem

to confirm this. He had singular audacity and had performed many marvelous surgical cures. He bandaged with a deft hand. How the thoughts of the older ones hark back to student days. They have looked from the benches of the amphitheater upon the counterpart of Dr. Rameau and noted with awe and admiration his studied carelessness in dress, his impressive physiognomy, his air of indifference, his spectacular and from present day standards, septic performances.

Dr. Rameau was a non-militant atheist. The study of physiology had determined a disbelief in the spirit and intolerance in discussing the subject. He despised the output of his friend, Talvanne, alienist, but made use of the latter's methods to establish the contention that the child of his wife, young, religious, and in love with a painter, was not his own. His prescription for the follies of love, "Baths of bran, good nourishment, and two hours' walk in the garden each day," may be worth remembering.

Talvanne, was more self-depreciatory than would seem to be necessary, notwithstanding daily measuring beside his refulgent surgical confrere to whom he gave credit for "Notoriety borrowed from your (his) glory." He saw in all criminals the irresponsible, called himself "the humble guardian of the insane," the "custodian of the demented," "a maniac caring for maniacs and not a therapist." In short, he represents the popular view of the psychiatrist of thirty or forty years ago, one indeed not wholly extinct at a much more recent period. "I want a doctor," screamed a hackman from the crowd around the train when our soldiers returned from the Spanish war. "Here," I said, hurrying forward, pleased to be of some little service. Then came the frost. "Oh, it's you, doctor! I want a physician." For an expression of Talvanne that "a patient who believes himself Napoleon or Jesus Christ is less curable than one who imagines himself Bernadotte or John the Baptist," there is nothing confirmatory in my experience. Your judgment in the matter is solicited.

George Eliot's "Middlemarch" justly ranks among the great novels. Lydgate is evidently a favorite of the author. "He had the medical accomplishment of looking grave whatever nonsense was talked to him, and his dark steady eyes gave him im-

pressiveness as a listener." He said, "I think so," with an air of much deference. There was a careless refinement about his toilet and utterance. He was able to gain Lady Chettam's confidence by tactfully admitting that all constitutions might be called peculiar, hers possibly more peculiar than others. His voice was habitually deep and sonorous, yet capable of becoming very low and gentle at the right moment. About his ordinary bearing there was a certain fling, a fearless expectation of success, a confidence in his own powers and integrity much fortified by contempt for petty obstacles or seductions of which he had had no experience. But this proud openness was made lovable by an expression of unaffected good-will.

Setting forth unfortunate matrimonial alliances as destructive of ideals and paralyzing to effort is the obvious motive of the story. "Middlemarch" is a tale of matrimonial misfits. Lydgate enters practice, intolerant of the conservatism that learns nothing, of the professional work that never advances. He is no more bump-tious than many young men fresh from college, filled with the conviction that self-assertiveness implies success. He doesn't mean to be uncharitable but is somewhat scornful and lacking in consideration for his confreres.

Lydgate was unable to reckon with the public opinion, the result of rooted prejudice and confidence in the essential rightness of that which has "always been done that way" and concedes to the public a far greater degree of discrimination as to physicians than it ever displays. His engagement to Rosamond Vincy came about in the most natural fashion. "He regarded plain women as he did the other severe facts of life to be faced with philosophy and investigated by science." But, Rosamond seemed to have "the true melodic charm," and as the author cleverly puts it, "when a man has seen the woman whom he would have chosen if he had intended to marry speedily, his remaining a bachelor will mostly depend upon her resolution rather than on his." Rosamond was extravagant, feather-headed, and destitute of common sense. She had no conception of the value of money or care for ways and means. He finds himself heavily in debt early in his matrimonial career and his unsympathetic life partner is constitutionally incapable of co-operating with him to avert inevitable disaster.

Caring for the disgraced protégé of Bulstrode, in alcoholic delirium, Lydgate fails to discern the interest the latter may have in his death, and unwisely accepts Bulstrode's tender of a loan. The patient unexpectedly dying, he comforts himself without inquiry as to whether his directions have been carried out, with the assumption that matters have gone wrong despite his careful medical prescription. Too late he finds himself in the mind of the ungenerous public an unconscious accomplice in the fact of the patient's death.

Mr. Lydgate had the jealousy of the city practitioner and the city medical school.

"There are few things better worth the pains in a provincial town like this," said Lydgate. "A fine fever hospital in addition to the old infirmary might be the nucleus of a medical school here. A born provincial man who has a grain of public spirit as well as a few ideas should do what he can to resist the rush of everything that is a little better than common toward London. Any valid professional aims may often find a freer, if not a richer field, in the provinces."

Every phase of the physician's life is touched upon in this remarkable story. How we sympathize with Lydgate in his plans for the organization of the new hospital and how much regret is felt that the means for its support are not forthcoming from some other source than the unworthy and sanctimonious Bulstrode.

A discriminating taste in sweethearts is one of the most important assets of the physician and has its commercial as well as its sentimental value. This taste was unfortunately not one of Lydgate's possessions. The impression is insistent that had he been successful in marriage, the promise of a useful life in his profession might have been fulfilled. Self-sufficiency would have been modified in time by inevitable reverses. Tactful suggestion from a sagacious helpmeet tempers intolerance and wears smooth the rough edges of egotism, while her subtle influence proves a potent factor in restraining that disposition on the part of mortals "easily tempted to pinch the life out of their neighbors' buzzing glory." Rosamond lacking all the social and ethical values of a physician's wife, was a millstone about Lydgate's neck.

Dr. Manette, the ex-prisoner of the Bastille, told of in Dickens' "Tale of Two Cities," furnishes a study in insanity. It is impossible to classify the case, although the conduct of the patient is to some extent suggestive. He returned to his shoemaker's box as mental confusion appeared precisely as many patients suffering from alternating psychoses take up habits of activity unknown in the more comfortable intervals.

Jobling, the medical examiner, serving for fee and reward, as he was particular to explain to prospective patrons of the Anglo-Bengalee Disinterested Loan and Life Insurance Company, was a shrewd one. "He had a protentously sagacious chin and a pompous voice with a rich huskiness in some of its tones that went directly to the heart like a ray of light shining through the ruddy medium of choice old Burgundy." Dickens caricatures him gently and evidently has respect for his sagacity. Jobling was of luxurious tastes. He was a stickler for the privileges of the profession and an upholder of its dignity and objected to the apothecary in the "drama of what's his name's" as a low thing and "out of nature altogether."

In this connection it may be mentioned that Bevan, the retired New York physician is the only American for whom in Martin Chuzzlewit, Dickens has a pleasant word.

The agitation of Dr. Bovary, called upon to care for a broken leg, his attempts to recall what the masters had taught and to collect his fragmentary ideas on the subject of fractures, his finding the adjustment of the one in question free from difficulty, his caressing words to the patient "with which the surgeon oils his bistoury" are familiar. One's first case is usually much simpler than the imagination has pictured it.

Poor, imbecile Bovary, married the first time unhappily to a widow of his mother's selection, and released from this relation by the death of his spouse, was married the second time to the daughter of a peasant educated beyond her sphere, full of mysticism and romanticism, erotic and indulging the outward forms of religion after the fashion of the sexual neuropath. It is impossible to feel other than pitying interest in his fruitless struggles against the handicap of a defective mental organization; and the abiding confidence in the wife who betrays him, effects his finan-

cial ruin and eventually commits suicide, call for some measure of appreciation if not respect. This story of *Madame Bovary* by Flaubert furnishes a lesson in the art of retaining affection which may appeal to our friends, the orthopedists. She is ambitious for her husband to attain renown through surgical achievement, and pictures her indifference disappearing in the glamour of his spreading fame. With another, an obsequious pharmacist, she induces a patient to be operated upon for the relief of club foot. Bovary operated with misgivings. His friend, the apothecary, descended to recount the result to the five or six curious observers standing about imagining that the patient would at once appear walking erect. Charles, having placed the limb in the mechanical appliance, returned home, where his wife anxiously awaiting him at the door, threw herself upon his neck. He ate much and took a cup of coffee, a species of debauchery which he permitted himself on Sunday only, as a rule. The evening was charming, full of pleasantries, of delightful dreams. He spoke of their future, of the improvement soon to follow in their menage. She found herself almost happy in a new, a saner, and better sentiment, indeed with a sort of tenderness toward the poor fellow who cherished her. The idea of Rodolphe passed through her head to be sure, but her eyes returned to Charles. She even remarked with surprise that his teeth were far from bad.

And how the next day narrative of the matter in the local press reminds us of the mischievous reporter and the things he ought not to do. "In spite of the prejudices of a large part of Europe, light now begins to penetrate in our country. Tuesday our little city of Yonville was the theater of a surgical experience which is at the same time an act of high philanthropy. M. Bovary, one of our most distinguished practitioners, has operated upon Hippolyte Tautain, a stable boy for twenty years at the Hotel d'Or. The novelty of the attempt and the interest which is attached to the subject had attracted such a crowd of people that it was really impossible to pass the threshold of the establishment. The operation, moreover, was performed as if by magic and scarcely a drop of blood came upon the skin, when so to speak, the rebellious tendon yielded to the efforts of art. The sick man, a strange thing (we tell it from seeing) did not com-

plain of pain. His condition up to the present time, leaves nothing to be desired. It is entirely proper to believe that convalescence will be short; and who knows but at the next village fete we shall see our brave Hippolyte taking part in the Bacchic dances in the midst of a chorus of jolly companions and thus prove to all eyes by his animation and his capers, his complete cure. Honor then to these generous wise men! Honor to these indefatigable spirits who devote themselves to comforting their kind. Honor! three times honor! Is it not a fact that the blind shall see, the deaf hear, and the lame walk! But that which fanaticism formerly promised to the elect, science now accomplishes for all men! We shall keep our readers informed of the successive phases of this remarkable cure." But alas! nothing succeeds like success and hopes for the rehabilitation of Bovary's disordered household went glimmering through the outcome of bad surgery.

"Poor Miss Finch," by Wilkie Collins, is not as finished and satisfactory from a literary point of view as a story might have been, constructed from the rather intricate plot to which it owes origin. A blind girl, relieved temporarily of the infirmity through a successful surgical operation, is cheated into accepting a twin brother of her fiancé in that relation; but is undeceived by the gradual waning of the romantic attachment based upon tactile and auditory impressions developed during the period of blindness and not enhanced by contact after sight is restored. The bona fide fiancé lends himself to the deception, fearing to reveal his complexion—blue from the use of nitrate of silver taken for the cure of traumatic (sic) epilepsy—and incur the risk of permanent aversion, based upon an unconquerable antipathy to dark colors which the blind girl had felt but did not otherwise distinguish. The surgeon, Herr Grosse, performs a skillful operation, standing out bravely against the opinion of his brother consultant, Mr. Sebright, of London. The latter is of unexceptionable manners, but unsuccessful; the former brainy and boorish, a favorite conceit of authors being that boldness and success in the surgical line imply manners so destitute of refinement as to merit social ostracism on the part of their possessor.

Three precious scoundrels including a forger, a man of the world, and Dr. Critier, der Irren Artz (von Bischoffshausen)

conspire to defraud: a murder results, and an innocent man is executed. The tragedy is witnessed from a hotel window by an invalid who recognizes in the man upon the scaffold proclaiming his innocence, a brother from whom she had been separated for many years. The shock destroys her mental balance and she is placed, through the connivance of her nephew, the assassin, in Dr. Critier's private asylum. Many vicissitudes befall her, among others poisoning by her nephew who has ingress to the institution through a side portal. Dr. Vulpian, of Paris, is consulted. He detects from the inspection of vomited matter the presence of datura stramonium and with the physician then in charge (who had bought out the refugee, Dr. Critier) lays a successful plan to capture the villain. Execution follows and the patient is restored to health through the shock of witnessing it from the same room and under circumstances similar to those incident to her breaking down. *Similia similibus curantur.*

It was impossible, says Tolstoi, to make ill health out of the fact that Ivan Ilyitch sometimes complained of a strange taste in his mouth and an uneasiness in the left side of the abdomen, but the feeling became more and more manifest. There was a dull weight in the side, and an irritable temper that led to frequent domestic jangles; and the little islands on which husband and wife could meet without fear of explosion grew fewer and fewer. His querulousness began just before dinner. Sometimes there would be a nick in a dish, as the apparent exciting cause of anger, sometimes his food did not suit him. At first his wife answered in kind; then she concluded that the bad manners proceeded from trouble with assimilation and held her peace, regarding her meekness as highly meritorious. After one scene in which Ivan had been particularly unjust and disagreeable and which he accounted for on the ground of ill health, she suggested a famous physician and medical care.

Ilyitch found everything as he expected—everything was done in the usual way—the having to wait and the pompous doctorial air of importance, so familiar to him; the same as he himself assumed in court; and the tapping and the auscultation; and the leading questions requiring answers predetermined and apparently not heard; and the look of superlative wisdom which seemed to

say "You, now, just trust yourself to us and we will do everything; we understand without fail how to manage; everything is done in the same way for any man."

The doctor said, "Such and such a thing shows that you have such and such a thing in you; but if this is not confirmed according to the investigations of such and such a man, then you must suppose such and such a thing. Now if we suppose such and such a thing, then—" For Ivan only one question was momentous. Was his case dangerous or not? The doctor ignored it as idle and undeserving of consideration; the only thing to do was to weigh probabilities—floating kidney, chronic catarrh, disease of the blind intestine. In the end the question as to kidney or bowel disease was settled by the doctor in the most brilliant manner in favor of the bowel trouble—making a reservation in case an analysis of urine should give new results and then the case would have to be examined anew.

All this was exactly what Ivan Ilyitch has done a thousand times in the same brilliant manner for the benefit of the prisoner at the bar. From the doctor's resumé Ivan Ilyitch came to the conclusion that as far as he was concerned it was bad; but as far as the doctor and perhaps the rest of the world was concerned, it made no difference.

It will be observed that this story is told of the internist, not of the psychiatrist. It is probable that we of another branch of the profession have encountered incidents similar to the one related occurring in the practice of our friends in internal medicine and surgery. For their sakes, I would, if I might, conceal the frank statement of a ghastly situation but candor compels the truth though through it I reveal my neighbor's weakness. It shall not be blinked.

The physician, Zosimoff, in Dostoievsky's powerful psychological novel, "Crime and Punishment," was a large and gross man of twenty-seven, of bloated face, covered with blemishes and indifferently shaven. His hair was straight and nearly white. He wore glasses and on the index finger of his thick hand blazed an enormous ring. He wore loose garments of studied elegance. His linen was irreproachable and a heavy gold chain dangled from his waistcoat. There was something lazy and phlegmatic

about his carriage and to appear careless evidently cost effort. Despite the watchfulness which he exercised upon himself, a pre-tentious manner was constantly in evidence. All his acquaintances found him insupportable but esteemed him highly as a physician.

He was bombastic and egotistic but seems to have had a good grasp of the case in question and loved to air his erudition. The delirious condition under which the patient seemed to be laboring was rightly judged to be the "product of complex influences, physical and psychical, such as preoccupation, fear, disquiet, and the disposition to indulge in revery." Perceiving without seeming to do so that he was listened to attentively, he elaborated complacently upon this theme. Eventually he retired from the room enchanted with the visit and himself.

The picture of Boutan drawn by Zola in "*Fecondité*," is that of the conscientious physician, the wise counsellor in trouble, the friend of the family, and the safe medical advisor. Himself a bachelor, he was a strong advocate of the position taken by our honored President in respect to race suicide and deplored the evils which are the *raison d'être* of the book. The portrait of Gaude, on the contrary, is sanguinary and revolting. He is held up to just execration and the pages devoted to his work, read and pondered, might well deter the over bold and thoughtless surgeon from the terrible blunder of ill-considered operating. The sketch of Mainfroy, the aide of Gaude shows an insight on the part of the author into a certain sinister type of medical humbug. He was a large boy of thirty, always in frock, his face grave and wearing a wise look. His clientele was composed largely of women who assure to mediocre physicians a sufficient income. It was his rule to display much gravity over the least indisposition and to lay undue stress upon the slightest nervous symptoms, hearing complaints patiently, prodigal of remedies. Called to see a patient suffering from the results of abortion, he was chary of words, but frightened her by an attitude of suspicion of subsequent evils and chronic disease. She became his willing slave. She was disquieted by the movements of his head, by his reticence, by his equivocal words, evoking all manner of frightful infirmities. He esteemed himself as of perfect professional honesty. He would not personally abuse the confidence of an invalid outside of the

little medical "gateries" which he permitted himself with women; but this did not prevent him from being on occasions the *rebatteur* of certain celebrated surgeons; bringing them clients and receiving his percentage in all serenity of soul. That which followed did not concern him. He had simply served as an obliging intermediary and it was for the prince of science, the great operator, to see and to act.

For nearly a year, Mainfroy and Serafine played light comedy. Neither one would have been able to say which had first suggested operation. He came regularly each week. She called him, exaggerated her ills and spoke of atrocious pain, and when she lost patience there came a time when operation was mentioned. He had for a long time shaken his head over this, preferring to keep a client who paid well, but he knew the end would be that she would escape him; and herself consult the surgeon. He knew that the slight inflammatory condition remaining would be inconsequential if she took proper care of herself, but affected to despair of her recovery and said it would require months and months at best. Then with these conditions one never knew. Perhaps there was a complication which escaped his diagnostic skill. One day he pronounced the word "cyst" without affirming anything and at once it was a question of Gaude, the operation being practically decided upon.

Dr. Antonio (Ruffini) was a physician, a botanist, a lover of nature, a political revolutionist, a warm-hearted man and eventually a martyr to his devotion to his country. He encounters an overturned stage-coach containing an English baronet and his accomplished daughter, the latter of whom had through the accident sustained a broken leg. Her father, of whom it was said, "his sojourn abroad left undisturbed the spider webs of prejudice spread on his intellect which kept safe all the dead fires of his youthful notions," was full of dislike for foreigners.

"Bleeding, no bleeding whatever on any account. I will have no bleeding. Dr. Antonio colored up to the white of his eye—and who knows what he was going to reply, but checking the ready rejoinder by a strong effort, he said slowly and calmly, 'Not even if I assure you it is absolutely necessary?'" Beaten but not persuaded, Sir John sent for other medical advice in the

absence of Dr. Antonio. This consultation, for such owing to the new physician's recognition of professional ethics, it proved to be, came out with honor to Dr. A., who was finally installed in the care of the case without reserve. Here too he acted in a broad and dignified spirit, overlooking the offense of the father in his interest in the patient. Reviewing the situation, however, one can hardly escape the conclusion that he was unwise in concealing in the beginning from such an irascible man the extent of the patient's injury.

Dr. Wilson in "A Wheel of Fire," by Arlo Bates, is hardly worth introducing except for the account of the disappearance of the insane brother. This has a home-like ring. There is that lack of accuracy as to the precise time of departure of the escaped patient with which we are all painfully familiar.

"I am Dr. Wilson," he said. "Mr. Wainwright escaped this afternoon. He happened upon a paper this morning which mentioned his mother's death. He declared he must come home to comfort you. I gave orders that he should be carefully watched but he was gone at supper time and I started out to find him." "Do you know at what time my brother left the retreat." "Not accurately. He was in his room at two o'clock, but it must have been very soon after that he went out for I was at my desk writing by three with my door open so that I could see the whole length of the corridor." That he could see the whole length of the corridor is not quite comprehensible to a physician living apart from patients. It is learned, however, that Wilson was there temporarily for purposes of study. Under the circumstances we are not obliged to apologize for his making flippant references to the confinement of patients in padded rooms and we need not writhe under the thought that his manners are contrasted unfavorably with those of a representative of the legal profession.

Charles Reade is said to have been the pioneer in yellow literature. If "Very Hard Cash" had at the time it was written any reason to be, psychiatrists may comfort themselves with the reflection that tremendous strides have taken place in the care of the insane since 1863. It is a far cry from the Betsy Prig, of Martin Chuzzlewit, whom Dickens insists is typical of the hospital nurse of that period to the graduate nurse of to-day and from

the private asylum portrayed in "Hard Cash" to the homelike hospitals of the present time. Such a story would have no vogue now among the reading public but many will in candor admit that it represents their boyish conception of the asylum, its indifferent or brutal management and its unfortunate inmates. Were matters as bad as painted, or did books of this nature determine the sentiment of popular dread and disapproval of institutions for the insane? Is it not likely that the unnecessary atmosphere of secrecy and the lack of direct acquaintance of the public with the internal administration of such establishments bred distrust and suspicion? "Hard Cash" is an apotheosis of charlatanism and a denunciation of professional opinion from cover to cover. It is pedantic and prolix, but shows shrewd perception or vivid imagination on the part of its author. It is caustic and censorious, both as to methods of management and the lunacy laws of Great Britain with which the author is evidently familiar. Its interest for us, lies in the little mirrors held up of formulas in expression and the suggestion of biased attitudes in examination.

Alfred Hardie, in love with the daughter of a sea captain who had been defrauded by Hardie's father, was committed to the asylum through conspiracy. The examining physician was prepared to find him insane and could not escape prejudice from the early impressions introduced into his mind. Alfred's sister is innocently a party to the wrong. Dr. Wycherley was called.

"Papa," said Jane, "poor Alfred sleeps very badly; I hear him walking at all hours of the night."

"I thought as much," observed Dr. Wycherley; "Insomnia is the commonest feature. To resume; the insidious advance of morbid thought is next marked by high spirits, or else by low spirits; generally the latter. The patient begins by moping, then shows great lassitude and ennui, then becomes abstracted, moody and occupied with a solitary idea."

Jane clasped her hands, and tears stood in her eyes, so well did this description tally with poor Alfred's case.

"And at this period," continued Dr. Wycherley, "my experience leads me to believe that some latent delusion is generally germinating in the mind, though often concealed with consummate craft by the patient; the open development of this delusion is the

next stage, and, with this last morbid phenomenon, incubation ceases and insanity begins. Sometimes, however, the illusion is physical rather than psychical, of the sense rather than of the intelligence. It commences at night; the incubator begins by seeing nocturnal visions, often of a photopsic character of hearing nocturnal sounds, neither of which have any material existence, being conveyed to his optic or auricular nerves not from without, but from within, by the agency of a disordered brain. These, the reason, hitherto unimpaired, combats at first, especially when they are nocturnal only; but, being reproduced, and becoming diurnal, the judgment succumbs under the morbid impression produced so repeatedly. These are the ordinary antecedent symptoms characteristic of the incubation of insanity, to which are frequently added somatic exaltation, or, in popular language, physical excitability—a disposition to knit the brows—great activity of the mental faculties—or else a well-marked decline of the powers of the understanding—an exaggeration of the normal conditions of thought—or a reversal of the mental habits and sentiments, such as a sudden aversion to some person hitherto beloved or some—

“And, oh, doctor,” said the distraught sister, “he knits his brow often and has given up his studies, won’t go back to Oxford this term.”

“Exactly,” said the doctor, “and seeks isolation and is a prey to morbid distraction and worry, but has no palpable illusions, has he?”

“Not that I know of,” said Mr. Hardie.

“Well, but,” still objected the persistent and well meaning but misguided sister, “did he not say something to you very curious the other night about Captain Dodd and fourteen thousand pounds?”

Mr. Hardie’s blood ran cold. “No,” he stammered, “not that I remember.”

“Oh, yes he did, papa. You have forgotten it, but at the time you were quite puzzled what he could mean and you did so,” she put her finger to her forehead, and the doctors exchanged a meaning glance.

Descriptions of Alfred's admission under deception, his discovery that he was a prisoner, his attempts to escape, his frenzied conduct giving confirmation to the belief in his insanity, his interviews with the physicians, with the attendants, with the Lunacy Commission, with the erotic Mrs. Archbold, are given at intolerable length. The formulas of expression, the misinterpretation of testimony, the prejudiced viewpoint, the sufficient sprinkling of the plausible to carry along the exaggerated and the improbable are strongly suggestive of the story of a manic-depressive patient in the period of elation. It reads very much like the subtle prevarication of the more intelligent patients of this class, but is for us worth reading as showing the desirability of avoiding mannerisms, formalisms, and machine-like methods in dealing with the insane. Reade's own mental organization was peculiar. He was litigious, quarrelsome, and intolerant, and has been called by a noted alienist "a splendid crank."

Other physicians beside the psychiatrist come in for a scoring in "Hard Cash." Alfred's fiancée, with unrecognized symptoms of love, is discovered by Mr. Osmond to have hyperæsthesia, or as the unprofessional person would say, "excessive sensibility."

Dr. Short, subsequently called, discovered a slightly torpid liver; a titled London surgeon that the heart was the peccant organ and the court physician, a somewhat morbid condition of the nervous system. It remained for the charlatan Sampson to discover the true malady.

To turn from this story and that of Christie Johnston, written in the same revolting spirit, to the "Bonnie Brier Bush," is like emerging from slime and ooze into the bright, crisp air of sanity and sunshine. Profound gratitude is owing to Ian MacLaren for the tribute paid the medical profession in the description of MacLure. "The Bonnie Brier Bush" is sweet to read, but he who fears the expression of emotion and would preserve a reputation for rigidity would do well to peruse it in the solitude of his room. It is a tale of devotion to duty and points to high appreciation on the part of its author of the physician in fact.

GENERAL REMARKS.

On the whole the lay novelist has treated the doctor fairly, but the story faithful to the alienist remains to be written. Who will

attempt this task? So far as the literature of the subject is concerned, the story of the asylum or hospital for the insane is the tale of wrong doing. Dr. Critier is a scoundrel, the physicians in "Hard Cash" are mercenary and repellant. Professor Hieronymus, in a story by Amalie Skram, is cold and egotistical and Dr. Wilson, in "A Wheel of Fire," represents nothing we regard as desirable in one having to do with the care of the insane. We may, however, comfort ourselves with the reflection that the appetite for the sensational is no longer so largely fed by the penny dreadful and that were there ever reasons for the animadversions of a Charles Reade, the time has long since gone by.

General hospitals once shared public disfavor as witness—Middlemarch. Then came popular appreciation of hospitals and as time goes on they are more and more frequently called into requisition. The asylum of long ago had its horrors no doubt, but its present day successor is the refuge of the mentally afflicted. It justly commands public support and confidence and the story of its work is the story of the lives of devoted men and women inspired by exalted ideals and deep conscientiousness, working along scientific lines toward the amelioration of a trying affliction.

PSYCHIATRY AND EXPERIMENTAL PSYCHOLOGY.

By R. S. WOODWORTH,

Adjunct Professor of Psychology, Columbia University, New York.

Psychology and psychiatry have grown up in relative isolation from each other. Medicine, "the mother of the sciences," was less intimately connected with the birth and early life of psychology than with the origin of most of the other sciences. The study of the mind was first undertaken in systematic form by the philosophers, and this association remained for many centuries a controlling one in the history of psychology. Even at the present day, the question whether psychology should more properly affiliate with philosophy or with the natural sciences is regarded as a fit subject for discussion, and opposing views on it are expressed by eminent psychologists. Students of other sciences are sometimes inclined to deny the right of psychology to call itself a natural science, and for two reasons. On the side of method, there is still much that is current in psychological books and discussions that appears to the student of empirical science quite strange and foreign in tone. And on the side of results, doubt is expressed whether psychology really has anything to teach, which common sense and common observation have not sufficiently acquainted us with. Psychology seems sometimes to be engaged in an "elaboration of the obvious," in stating familiar facts in obscure phraseology, or at the best in putting together familiar facts into systematic shape, without adding to the store of facts. Whatever may be the proper abstract definition of a science, in the concrete we demand that a science which we are to study shall do more than classify and label facts that we already know; we require it to teach us something new; and on the practical side we wish it to guide our action where common sense is inadequate to meet the situation. These requirements are abundantly met by the physical, the natural, and the medical sciences; in comparison with these, psychology, the

daughter of philosophy, certainly has some difficulty in making clear its title to a place among the sisterhood of the sciences.

But psychology has had a new birth; and medicine, if not its new mother, may at least be called its grandmother, since it is to the physiologists that the new line of development is principally due. Beginning in a small way early in the last century, progressing slowly for several decades, then spreading out with great rapidity, this new, or physiological, or experimental psychology—though its professors often backslide into the old unregenerate ways, even as physicians, too, often betray a leaning toward philosophical speculation, to little profit—yet on the whole recent psychology has shown a sincere purpose to search for new facts, and to develop adequate empirical methods for establishing them. Many of the results so far achieved are neither startling nor specially illuminating, yet material is gradually being accumulated that deserves the attention of whoever has to deal seriously with the workings of the human mind. Accordingly, we see that the day of applied psychology is beginning, and that, in spite of pessimism in high places, investigators are finding it possible to apply the results and especially the methods of experimental psychology to the solution of important problems in education, law, and even business.

Though isolated from each other, psychology and psychiatry have not been without interest in each other's results; it must be feared, however, that the knowledge each has had of the other has often been indirect and vague. Thus far, it appears that psychiatry has had the worst of the bargain, that she has given much more than she has received in exchange. The clinical observation of mental defects and abnormalities has thrown a great deal of light on normal psychology. The most definite information that we have received from you is perhaps the delimitation of certain mental functions by means of those cases in which the brain defect can also be demonstrated, as in aphasia and psychical blindness and deafness. The order of dissolution of the mental powers in such a disease as paresis is suggestive to us of their order of rank in normal life. Morbid states of exaltation and depression, with the incompetency that attends them, help us to formulate the conditions of efficient intellectual work. Delu-

sions, phobias, fixed ideas—these seem to the psychologist to be supplied by nature in lieu of some magic microscope which should magnify the scarcely perceptible details of mental life into such proportions that they could not be overlooked. And so one might continue cataloging the indebtedness of psychology to psychiatry, and run up a long list of items of information which you have supplied, and which we, so far as we have known and understood them, have found of value, and oftentimes of very great value, in analyzing the performances of the mind, and in pointing the way to further discovery.

On the other side, alienists have not been neglectful of the teachings of psychology, though it may be feared that they have frequently found them rather barren of practical applications, and even rather lacking in suggestions for the scientific description and explanation of mental abnormalities. Psychology might be a help in furnishing names and modes of expression, but for real insight into the workings of the deranged mind, it has perhaps appeared to offer little that could not be gained by an attentive observer who had never bothered his head with psychological books. This was almost necessarily the case so long as psychology based all its statements on common observation. To get special results special methods are needed. To increase the stock of facts beyond what common observation could reveal, psychology had to develop methods that were finer than those of common observation. This she has done to a considerable extent, and is doing more and more. While she is as yet in no position to point with swelling pride to her achievements, she may fairly claim that she has accomplished enough to be of some service; and may fairly ask to have her stock of goods re-examined by the psychiatrist, in the hope that he will find there something of use to himself. As an illustration of the change wrought by experimental methods, I may mention the application of psychology to certain legal problems. The criminal lawyer has to be a practical psychologist, yet the study of psychological textbooks has not proved of great assistance to him. He knew men from his own observation, though he might not express himself in the technical terms of the psychologists. But some one thought to apply the methods of experimental psychology to such problems

as the reliability of the testimony of eye-witnesses, and unearthed such a degree of unreliability as surprised the lawyers. The results of these and similar experiments that have been made were such as to demand very careful consideration from the legal profession.

Common observation is not a thoroughly reliable guide. There are, of course, facts so patent as to require no special precautions for their detection. But the further the experimental psychologist carries his researches, the more skeptical he becomes of the value of common views and easily accepted doctrines regarding the mind. The trouble is not indeed wholly one of observation; the tendency to supplement what we can see by what we imagine to be there, to speculate where we cannot prove, is perhaps ineradicable in human nature, and specially in psychology on account of its long-standing association with philosophy. There are current in psychology numerous well-appearing theories which when looked into are found not to rest on experimental observation, but on a few superficial statements of fact, eked out by a vast amount of logical construction. All such are properly subject to suspicion, and the more beautiful and self-consistent the logical construction, the more suspicious they are, because they are so much the less likely to owe their acceptance to agreement with fact. The experimental psychologist holds that we shall never know much about the mind until we take the trouble to find it out, and that the trouble will consist in controlling the conditions under which observations are made and in using sufficiently fine methods of observation.

As an example of a doctrine which owes its currency to superficial observation, and which, nevertheless, has been used extensively in the explanation of mental phenomena, we may take the view that the brain is very liable to fatigue. Common observation seemed to show that fatigue comes on very quickly in mental work, and this apparent fact has done duty in many psychological explanations. "Constant errors" in sense perception, shiftings and fluctuations of attention, changes in the efficiency of mental work, have been regarded as sufficiently accounted for by appealing to mental fatigue. The brain was supposed to fatigue so much more rapidly than the muscles, that what was apparently

muscular fatigue has been explained as more probably brain fatigue. It was even suggested that the nervous system, by its capacity for quick fatigue, served to protect the muscles from overwork, much as a fuse in an electric circuit, by burning out easily, protects the more valuable apparatus in the circuit from excessive currents that would damage them. There was a certain amount of inconclusive experimental observation behind this view, but for the most part it owed its acceptance to the common observation that people, or rather many people, grow tired quickly of mental work, and feel that they must stop. Experimental tests in prolonged mental work have, however, revealed a surprising degree of resistance to fatigue. A series of reaction time tests, continued all day and on into the evening, failed to show any marked decrease in speed. Memory tests continued without break for five solid hours showed a steady improvement throughout. School children have been found as successful in sharp mental tests at the close of school in the afternoon as they were at the opening of school in the morning. College students, so far from being mentally incapacitated by the hard mental labor of a three-hour examination, have actually done better in all sorts of mental tests after the examination than before it. More thorough study of the fatigue of the neuromuscular apparatus has shown that this fatigue is certainly in large part, and perhaps entirely, muscular. If muscular exertion is as far as possible excluded, as when the movements are required to be not forceful, but accurate, they can be repeated hundreds and thousands of times with no pause for rest, and without showing any marked degree of fatigue. In all probability, the central nervous system, like the peripheral nerves, so far from being quickly worked out, is capable of an enormous amount of continued activity without serious loss of functional power. How then are we to explain away the common observation of quick fatigue in brain work? Experiment shows pretty conclusively that this familiar form of fatigue is a sensory or emotional affair, a feeling of fatigue, not a true fatigue in the sense of incapacity. In case of the fatigue that appears early in muscular exertion, at a time when the muscles are still demonstrably in good condition for work, the fatigue is really composed of unpleasant

sensations that come in from the active members. The tendency of these sensations is to make us stop the activity that is causing them; but if we resist this tendency, and continue the muscular effort, we find that we are not incapacitated after all; we can still keep on, almost if not quite as well as before, in spite of the sensations of fatigue, which indeed usually disappear with the further continuance of the muscular activity. Similar remarks apply to the fatigue that is apt to come on early in mental work; it is composed partly of *ennui*—a mere emotion—partly of tendencies to do something more agreeable to the natural man, partly of sensations of strain arising from the eyes, neck, and various parts of the body, which dislike being held fixed in a cramped position. Let the mental worker resist this medley of incentives to stop work, let him determine to stick to it for a while longer, and he will usually find that his brain is still in good working order, that the feeling of fatigue passes away, and very likely that his best work is done after rather than before the time when his feelings told him he was played out. I have dwelt on the matter of fatigue partly because these results from normal persons may be of some interest to the psychiatrist for comparison with the conditions that obtain in abnormal brains, and partly as an illustration of the value and necessity of experimental methods for determining the real facts, even in the most familiar situations of life.

The main suggestion which as it seems to me experimental psychology has to offer to psychiatry is contained in just this demonstration of the insufficiency of common observation and the treacherous nature of logical schemes of mental function which rest only on common observation for their empirical basis. If this is true in normal psychology, it appears almost certain that it will prove true for abnormal psychology as well. The psychiatrist is to be sure concerned primarily with divergencies from the normal, many of which are so obtrusive as to require no special devices for their detection. That the paranoiac is deluded, the maniac excited, the hysteric unstable and suggestible, that certain patients suffer from hallucinations, or from amnesia, or from confusion, the common methods of observation sufficiently show. Moreover experimental methods cannot supplant and

make unnecessary the methods of clinical observation that have gradually been developed in the experience of alienists. Just so, in the general practice of medicine, the thermometer, the test-tube and the microscope have not supplanted the less special methods of clinical observation. But just as recent progress in medicine is largely due to the introduction of special methods from the sciences that have developed them, so it would seem that the path of progress in psychiatry, in so far as it lies in the direction of the differentiation of mental symptoms and in the understanding of the mental condition of the patient, will probably run parallel to the path of progress in psychology, the path of experiment. It must be true—I believe you will agree that it is true—in psychiatry as well as in psychology, that observation unaided by the special methods of experiment is often uncertain and fallacious; it is incapable of giving exact information regarding the mental condition and intellectual capabilities of the patient. It furnishes rough information, which is often but not always sufficient, and is sometimes misleading. The maniacal condition appears to be one of accelerated mental and motor activity; but tests have shown that this appearance of speed is deceptive, and that the maniac should be called slow rather than fast in his thoughts and movements. Similar tests have shown that the condition of alcoholic intoxication which seems to make a man preternaturally prompt and fertile in the production of ideas is at bottom a condition in which the process of association is slower than normal, and in which the stock of ideas is impoverished rather than enriched. To take another sort of case, idiots appear to constitute a class by themselves, a subspecies of the race, but tests seem to prove that they are after all not separable by any sharp line from normal individuals, that there is no typical idiot standing at the center of a "distribution curve" of idiots, but that they are simply those members of the race who differ in the most extreme degree from the normal type. There are probably numerous other instances, some of theoretical and some of practical importance, in which the current descriptions of mental abnormalities would be changed by the application of experimental methods. On the other hand there will be many cases where experiment will not make any radical change in the descriptions

now current, but will simply make them more precise. Sometimes unaided observation hits the truth and sometimes not; since it is usually impossible to say, in advance of the application of refined methods, where they will greatly change our conceptions, and where not, it is best to try them wherever possible, and meanwhile maintain a healthy degree of skepticism regarding descriptions that have not as yet been submitted to the most rigorous tests.

It would of course be foolish to speak as if the use of experimental methods would at once resolve all doubts throughout the complicated field of mental abnormalities with which you have to deal. Your experience would make you reject at once any such exaggeration of the powers of experiment. You have found that experimentalists sometimes disagree, and that the results of even careful experimental work sometimes need revision. Experiment is no magic key to unlock the mysteries of the unknown; it is no royal road to learning. There is nothing supernatural about it; it is simply a human means of delving after the facts, and it must be used by beings hampered by human shortsightedness and inefficiency. Everything depends upon the man who uses it. He must have insight and adaptability and a saving measure of common sense. He must also have training. The path of psychological experiment is beset with pitfalls. With many of these we psychologists have become familiar by bitter experience, and it would be a great pity if our experience should not be a warning to those who shall experimentally study the insane. Here certainly it seems that psychology is in a position to be of service to psychiatry. The methods of investigation which have been invented, tested, and sifted in psychological laboratories, and the precautions which have been found necessary in order to get reliable results, should be placed at the disposal of the experimental investigator in the hospital for the insane. These things cannot ordinarily be learned from books; they need to be handed on personally from one man to another; from which it follows that the experimental investigator in psychiatry should be trained in the psychological laboratory as well as in the hospital. The breadth of the training required makes it likely that the number of workers in this field will long remain

small; but it is a work for experts, and a few really qualified men will accomplish more good than a host of dilettantists whose results are either meaningless or poorly established.

The proposal to utilize the methods of experimental psychology in the study of insanity is not entirely new, though it is recent. Enough has already been done to show that this is indeed a fruitful line of development. It would be instructive to summarize the results already achieved, did not their number and variety already make it impossible to do so within a small space. The study of sensations, for which the methods of psychology are particularly well developed, has thus far not proved so productive as studies in certain other lines, though valuable results have come from examination of the narrowness of the field of vision, and of the inertia of the retina as shown in the non-perception of flicker, in hysteric and psychopathic cases. Motor studies have so far been more productive than sensory. Tracings of involuntary movements and tremors have proved instructive; records of the force and speed of voluntary movement, of the reaction time, and of fatigue, are still more promising. Qualitative analysis of the association of ideas has yielded results that add precision to the symptomatology of certain diseases. The speed of association has also been measured, and with interesting results. Studies of memory and the power of memorizing have made it possible to give a more exact account of the progress and decline of amnesia in the polyneuritic psychosis. Simple tests of mental efficiency, such as adding, have proved of considerable use. Practise experiments have shown that it is possible to improve the condition of certain patients by the use of systematic courses of mental training. Enough at least has been accomplished to make the outlook bright for any institution or qualified man who will undertake to promote the science by the use of these methods.

It would be presumptuous in an outsider to attempt to tell you where your science is specially in need of advancement: inasmuch, however, as this address is largely a plea for the recognition and application of experimental psychology by students of psychiatry, I may be pardoned if I attempt to outline somewhat further the directions in which our methods may reasonably be expected to prove of service.

The prime service will be on the scientific side, in making possible a more exact description of mental symptoms and of the mental condition and degree of efficiency of different patients and in different types of derangement. In this connection, the possibility of quantitative studies deserves special emphasis. It is often urged that a science only becomes a science when it is able to express its facts and laws in measures and numbers; and psychology has sometimes been reproached for its inability to make quantitative statements. The progress of recent times has, however, shown that it is possible to reduce some of the facts of mental life to quantitative form. One of the most revolutionary discoveries of modern psychology is that individuals differ in every respect, even in functions which the older psychology had assumed to be constant for all normal human beings. Moreover it has been found possible to measure the differences between individuals in various mental powers, and thus has arisen the quantitative study of individual psychology, child psychology, sex psychology, race psychology, and animal psychology. The extension of this line of work to the insane, already begun, seems sure to increase the definiteness of our knowledge about them, and to place the symptomatology of insanity, to some extent, upon a quantitative basis.

The use of quantitative methods is likely to afford more exact information regarding the progress of the disease, and we may expect that, in time, curves of the change in mental symptoms, similar to the temperature curve, will be drawn and very likely prove useful for purposes of prognosis. In some cases, it may prove possible to try the tests before the appearance of actual insanity, and thus to discover minor symptoms that could be used in early diagnosis, just as it has been found possible in tabes to detect the deficiency of muscular sensibility by methods of quantitative psychology in cases where it could not be detected by the usual modes of clinical examination. In the same way, it may be found possible, and has indeed been found possible in certain cases, by quantitative methods to follow the further course of the disease after cure was, to ordinary observation, fairly completed. Psychological experiments, the object of which does not readily appear to the patient, may easily be adapted to detect

cases of simulation. It may be hoped, too, that in course of time the difficulties of differential diagnosis may be diminished by the minute study of the mental condition in different types of insanity.

The power of diagnosis seems to be in large measure a gift, born in a man, not to be acquired in its completeness by study, nor transmitted from master to pupil. The introduction of special methods into medicine has tended to place reliable means of diagnosis in the hands of those who are less gifted by nature in this direction, and we may hope by the introduction of similar methods into psychiatry, that while the great diagnostician will never be supplanted, yet identification of the disease may become more nearly a matter of routine.

One cannot tell beforehand how much may be accomplished in these different ways by the attempt to utilize psychological experiment in psychiatry. It is seldom that an investigator can be sure beforehand of the value and significance of his results. But we have good precedents for expecting results from such a combination of two sciences. Within our own time, the combination of physics and chemistry, in the investigations of a certain few men, has had enormous results, has established practically a new science, which has reacted most beneficially on the two sciences from which it sprang. Even so we may reasonably expect that the cross-fertilization of psychology by psychiatry and of psychiatry by psychology will result in a vigorous offshoot, a credit to our two sciences, a bond which shall replace their former isolation, and a source of great enlightenment to both.

THE UNITY OF INSANITY.

By H. A. TOMLINSON, M. D.,

Medical Superintendent of the St. Peter State Hospital, St. Peter, Minn.

The basis for the conclusions advocated in this paper is in the evidence furnished by the study of the cases included in the paper presented to the meeting of this association in St. Louis two years ago. These clinical studies, which had for their object the correlation of the mental with the physical, also developed certain data that have thrown some new light upon the purely psychological aspect of the study of insanity, and when considered in the light of modern physiological psychology; freed from the confusion of metaphysic terminology, they have seemed useful to us in the appreciation of the significance of the manifestations of perverted mental activity in the insane. Especially so, because the correlation of the mental with the physical suggests that the unity found in the apparent diversity of their relations, implies a similar unity in the aberrant manifestation of these same relations. That is, that all forms of insanity have a common basis, and that their apparent diversity is dependent upon inherent physical conditions resulting in instability or defect, which operate to determine a definite sequence in their manifestations, in accordance with the conditions in the environment of the individual affected.

These data may be summarized as follows: Those activities which make conduct possible, necessarily antedate the activities that are manifested in conduct; and the quantity and kind of the activities involved are the same, without regard to whether the conduct is or is not properly related to the environment of the individual. In the study of insanity we are not dealing with a tangible entity, but with the manifestations of perverted function that have no material qualities, and, furthermore differing from each other in detail as widely as do the material characteristics and environment of the individual in whom they are manifested. There is no abstract difference between the conduct of the sane

and the insane! The difference lies in the relation of the activities involved to the environment, and the degree of control of the activities that are manifested in conduct. In other words, we are dealing with alteration not destruction of function. In the one case these activities represent a response to external stimuli, the effect of which is habitual; while in the other, they are excited by centrifugally generated stimuli, more or less out of accord with external conditions.

Our experience has taught us that, in acute outbreaks of mental aberration, there has been antecedent somatic involvement, and there is coincident perversion in the processes of metabolism, even where there is no definite disease; and that the loss of control of the activities that are manifested in conduct is in proportion with the extent of the somatic involvement. Again, in somatic disease, and especially in the acute infectious forms, there is mental aberration manifested as delirium. It is also true that the presence of the delirium and its degree are not necessarily in proportion with the seriousness of the illness; but the degree of the mental disturbance and its extent are always in a direct ratio with the evidence of instability in the mental constitution of the individual. So that there may be active delirium, or even maniacal excitement, in an otherwise comparatively mild case of typhoid fever or pneumonia; in the puerperium after an easy labor, or in moderate alcoholism; while any one of these conditions may be extreme in other individuals without any manifestation of mental aberration. It is not very uncommon to see persons in the delirium of typhoid fever committed to the hospital as insane, where the presence of the somatic disease has been entirely overlooked. Also, violent excitement and special sense perversion may be the only evidence of the presence of alcoholism. So far as our experience goes, these individuals have in common an unstable nervous system, and those who suffer from the somatic effects only of these disease conditions do not. The same is true of syphilis, tuberculosis, and gout.

From these observations it seems obvious that there must be involved in the development of insanity in the individual, not only the directly acting cause furnished by the conditions in his environment, but also instability or defect in the development of the general nervous system; resulting in the diminution of its ca-

capacity, and the limitation of its potentiality to a varying degree. Furthermore, the groups into which the various manifestations of mental aberration would naturally fall, would be made up of those individuals in whom there was the same relative degree of defect, and the variation in the manifestations of the insanity in the different groups, would be the result of the difference in experience and environment. In other words, mental activity must necessarily be correlated with all of the organic processes, of which it is the synchronous expression; and this correlation is only possible when the potentiality of the nervous system is sufficient to maintain the coefficient of relation, coordination, and direction.

Primarily, then, we have to deal with the cerebral potentiality of the individual, as influenced by the conditions in his environment which exhaust this potentiality directly by overtaxation, or indirectly by the influence of impaired vitality in the general organism upon the limited mental capacity of the individual. Next in importance comes the recognition of the fact that in any given environment, the general conditions are practically uniform for all who are included within reach of their influence; consequently, if these conditions are harmful to some of those who live under them, there must be some inherent weakness in the individual that unfits him to adapt himself to them, so as to conserve his own welfare. When this inability is in the direction of physical activities, the result is apparent to every one; but, strangely enough, it has not been recognized as equally obvious that the lack of mental capacity that shows itself in imperfect control, incapacity for persistent effort and definiteness of direction, are the evidence of instability and defect, and, therefore, the expression of a limited cerebral potentiality.

The conditions connoted by the terms instability, defect, and degeneration, are so varied by those who use them, that there is a great deal of confusion as to their real significance; and just what departures from the normal are meant to be correlated and delimited by them. On this account these terms do not convey a definite meaning, and lead to erroneous beliefs as to their significance in describing pathological conditions.

In order to obviate confusion as to what is connoted by these terms as here used, the following definitions are given, based

upon the etymologic significance of the words, according to their derivation.

Instability may be defined as the liability to give way. Physically, by imperfect balance, and the tendency to respond excessively to the stimulus of slight incident forces. Chemically, by looseness of molecular combination. Biologically, by development of the functional at the expense of the structural tissues.

Defect may be defined as incompleteness; because of the absence of an element or part, irregularity of development or arrest of its processes. Physically, inertia, and the tendency toward reduction. Chemically, incompleteness or irregularity of molecular combination. Biologically, the tendency toward development of the structural at the expense of the functional tissues.

Degeneration may be defined as the process of reduction from the normal plane of development. Physically, by the change from the complex to the simple, the disintegration of energy. Biologically, by the atrophy of functional and the relative increase of structural tissue; the antithesis of development. Mentally, by the disintegration of the elements of mental capacity, particularly the loss of the power of attention, direction, and control.

The application of these definitions in psychiatry is simply to adapt the terminology of psychiatry to the current teaching of physiological psychology.

In the unstable individual, those influences in the environment that to the ordinary individual are indifferent, become disagreeable, painful, or fatiguing; while in the defective individual external impressions are not properly related, and are imperfectly coordinated, with the resulting confusion that follows futile mental effort. In both cases there is resulting incapacity, with loss of control, more or less permanent, according to the physical capacity of the individual, and the extent of the reserve force in the general organism. If the strain upon the nervous system be extreme or persistent, it is easy to see how a vicious circle will be established, with the resultant perversion of mental processes and impairment of mental capacity.

It is important, in order to avoid confusion, to make a definite distinction between mental aberration and loss of mental capacity; in other words, between insanity and dementia. While it is true that the presence of insanity presumes the precedence of loss of

mental capacity, it is also a fact that mental aberration may be present in any one, and not necessarily interfere with his relations to those about him. The insanity only becomes apparent when the individual is no longer able to control the activities that are manifested in conduct; and this loss of control will always be found to be the sequence to mental reduction, and the resulting confusion. This loss of control may be temporary, and the result of anger, pain, intoxication, or disease affecting the vitality of the general organism. But during the time of the absence of control, the conduct of the individual does not differ from the conduct of any other insane person. Indeed, in the ordinary relations of life, we determine the sanity of a man's conduct by the degree to which his power of self-control is developed. In some individuals this loss of control is more easily brought about than in others, and the loss is also more extreme and persistent. That is, they are normally deficient in this kind of mental capacity. In this class may be included those who commit crimes of violence and brutality. The history of these individuals shows them to have always been without capacity to appreciate anything except in its relation to self. There has persisted in them the primitive tendency toward the uncontrolled gratification of desire. There is also in these individuals an inherent dysesthesia that makes persistent effort a burden, and stimulates the craving for alcohol and narcotics. The experience of all but the most exceptional individuals will furnish incidents that exemplify the temporary existence of this dysesthesia, as the result of pain, privation, or grief; and every physician of experience has been called upon to deal with manifestations of mental aberration resulting from stress and strain of social and industrial competition, domestic exigency, or conjugal catastrophe. A study of these individuals and their life history would reveal the fact that their conduct had shown them to have been always unstable. There had been recurrent periods of exaltation and depression during which they were more or less uncontrollable, intolerant of restraint, and unable to apply themselves definitely to any occupation; while in their periods of normal mental status they were not materially different from their fellows. It would also be noted that this instability was most marked during adolescence, and that it was extreme just in proportion to the lack of those influences in the

environment of the individual that conserve the physical welfare and tend to develop self-control. However, these individuals increase in intelligence as they grow older, and attain a degree of self-control that carries them through life without any manifestation of mental aberration that would materially interfere with their relations with those about them. On the contrary, if the personal habits of the individual are such as to make him the victim of alcoholism or syphilis; or, if as the result of constitutional weakness, degenerative change sets in during adult life, as the result of exposure, strain, or overwork; then there begins a similar disintegrative change in the brain that has reached the limit of its capacity, and mental reduction begins. Now, if untoward conditions arise, the changes in the character and conduct of the individual soon become apparent in his relations with his fellows; and, in accordance with the law of reversion, those attributes that are primitive tend to progressively dominate the conduct. In other words, he becomes demented. Insanity, then, may be said to have to do with the confusion of the simple relations; while dementia indicates the loss of the power to coordinate the complex relations.

Insanity will manifest itself during the different periods of life in accordance with the mental constitution of the individual, and in each epoch its manifestations will be characteristic of the mental capacity of the group in which the individual belongs! During the period from second dentition to puberty, there is confusion, suspicion, fear, and explosive violence. During adolescence evidence of instability or defect is more apparent, and its influence upon the nature of the aberration is more conspicuous. In those individuals in whom the degree of instability is the slightest, there may be only a period of confusion, with alternate exaltation and depression. If the instability is greater, the conditions in the environment which gave rise to the simpler manifestations of aberration, will have greater effect and be more persistent; and the confusion may develop into stupor, ecstasy, or trance. The exaltation may become explosive violence; and the depression degenerate into complete inhibition of the processes of relation, coordination, and emotion; accompanied by muscular rigidity; and even involving the vegetative processes, so far as they are volitional. In the defective, however, because of the in-

herent limitation of capacity for relation and coordination, those manifestations that are extreme in the unstable become the primary ones; and the animal-like furtive suspicion and fear, alternate with explosive violence, or the disposition toward seclusion, with extreme inhibition and rapid mental reduction.

In the period of adult life the individual having acquired more intelligence and a greater degree of self-control, insanity is practically always consecutive; and the intellect being more highly cultivated by the diversity and complicated nature of the experiences, there is a more or less prolonged period of introspection preceding the loss of the control of those activities that are manifested in conduct; with the resulting morbid self-consciousness. As a rule, too, some physical strain, over-work, or disease has lowered his vitality, so that there is a persistent dysesthesia. Ordinary sights and sounds have a special purport, and are associated with experiences in the life of the individual that have been untoward or unfortunate. After a time, and as the result of the persistent dread and suspicion, confusion supervenes, and the voices of those by whom he is surrounded are heard to utter sneers or threats, to make accusations, or suggest ulterior motives for his conduct; while to the sight, the actions of friends or relatives assume a corresponding significance. This self-absorption, and the resulting indifference to bodily habits and wants, produces indigestion and constipation. The autointoxication that results leads to tactual, olfactory, and gustatory hallucination; while the visual and auditory hallucination, and the pictures that result from the wrong relation suggested by the morbid self-consciousness, end in depreciatory and persecutory ideas, which gradually acquire a substantive basis with a definite sequence. The individual becomes impervious to evidence or demonstration. The persistence of sights and sounds forms a picture of that which is dreaded and anticipated. Suspicion ends in certainty of belief; the nature of the belief varying with the changes in the environment, governed largely by the previous experience of the individual, changing in form, but always having the same substantive basis; the definition of the belief varying with the amount of mental reduction.

Even the normal individual is not always on the same plane of mental activity. That is, there is a cycle consisting of the normal

plane of activity, out of which develops a period of exalted activity, to be followed by a more or less gradual fall to the sub-normal, and then the return to the normal. These variations are most apparent and extreme during adolescence, most conspicuous in the unstable, and in the defective they may be aberrant in the order of their recurrence. The persistence of the normal plane of activity is also dependent upon the physical condition of the individual. Vigor will prolong the exaltation of capacity; while lowered vitality will intensify the depression from the normal plane. Besides, under certain conditions representing strain or exhaustion in the nervous system, a rapid variation in the complements of the cycle may occur, with entire disappearance of the normal plane of activity. Therefore, there is represented in the phases and alternations in the mental activity of the ordinary individual, all of the manifestations which, when extreme, are described as the evidence of insanity. Were all people exactly alike, and were their hereditary predispositions similar; then, given similarity of experience and conditions in the environment, we might predicate uniformity in the manifestations of their mental activity. But, although this likeness is impossible, there is a certain similarity in both environment and experience that serves for the definition of the average; and gives us the basis for our deductions as to the mental status of each other. Then, too, the variations in the conditions in the environment are never entirely individual, but fall naturally into classes, as they are developed by the common experiences of those individuals who are associated together, similarly placed, or similarly influenced by the conditions with which they are surrounded; and these individuals would naturally be the ones of similar mental capacity. The man of limited intelligence and the child see in the woods and in the graveyard the forms of animals or men, his enemies, or the spirit of some restless tenant of the grave come to frighten him. In both there is the persistence, as a tendency of an attribute common to their remote ancestors. The cultivated individual, however, becomes the victim of morbid introspection, sees the vision of his failures or disappointments grown large, or reads into the attitude or actions of those about him the reprobation he dreads, or the malice his self-consciousness prompts him to anticipate; and he shrinks and tries to hide from what he fears will

overwhelm him, cunningly plans escape or revenge; or, frenzied by fear, he violently denounces or attacks his enemies, or would defend himself against them. Therefore, the form in which the mental aberration will manifest itself, will be determined by the capacity of the individual to be influenced by the conditions in his environment, and his reaction toward them will be determined by his ability to appreciate his relation to them. In other words, his ability to "adapt internal to external relations." You would not expect the same response from the individual of limited capacity and no culture, that you would from the keen intellect highly cultivated; nor would the definition of their experiences be equally valuable with relation to their individual welfare.

Those who live with the insane, and observe them closely for long periods, cannot help but note the absence of those clinical syndromes usually called forms of insanity. Among recent cases, the man who is exalted to-day may be depressed to-morrow. He may laugh and cry alternately; or the beaming good nature of this week may become the sullen depression of next week; according as the euesthesia and grandiose ideas are followed by the recurring dysesthesia and depreciatory and persecutory ideas. Or the man who at one time is the victim of religiosity and pietism, praying and haranguing his neighbors, or busily reading the bible; at another time is boisterous, profane, and obscene. Again, he is wandering about haggard and anxious; deploring his condition and, ever alert for an opportunity to attempt suicide. The chronic alcoholic comes into the hospital violently excited, sullen and irritable, and may be delirious or comatose. But with the relief of constipation, improvement of digestion, and in proportion with the rehabilitation of the functional activity of the kidneys, these manifestations of mental perversion disappear, and only confusion remains, or the more or less well defined persecutory ideas that had been present for a long time, but had been masked by the acute outbreak. During the course of the acute outbreak there may have been present all of those particular manifestations that are classed as entities constituting particular forms of insanity. The man who comes into the hospital in the condition of depression may have been before, or will be again, the victim of exaltation or maniacal excitement; and the woman who, following labor may become wildly exalted, profane and

lascivious, at the end of the month may be picking the bed clothes to pieces, smearing her food and feces in her hair or over her person, and drinking her urine. Again she may become violently excited and homicidal, or the victim of phrensied agitation, and persistently suicidal.

In studying the history of the individual in 8000 cases of insanity, with the object of determining the primary mental status of the patient, it was invariably found, either in the history, or from information furnished by the relatives, that the patient who was excited when he was brought to the hospital, had been depressed before the outbreak of excitement; and those who were depressed when committed had passed through a period of exaltation or excitement, before the depression was recognized as the evidence of mental aberration. In those cases where a complete life history of the individual was obtained, it was found that, without regard to the apparent form of mental disturbance present at the time of admission, there had been alternating periods of exaltation and depression since puberty, and that these alterations had been conspicuous, just in proportion with the indications in the life history of the individual of the presence of instability and defect. When the degree of defect in the cerebral development of the individual is so great, and the potentiality so limited, that his capacity is exhausted in the beginning of the period of adolescence, the process of degeneration begins before development is complete, and in its most extreme form is manifested in simple progressive dementia; and whatever mental aberration there is, is shown in perverted sense relations that have to do directly with animal existence; while, in those in whom defect is not so marked, and even in the unstable late in life, this same degree of mental reduction may develop as the result of physical conditions that give rise to extreme somatic degeneration; like tuberculosis, syphilis, alcoholism, or arterio-sclerosis. Another fact is of importance in this connection. In the defective, a traumatism involving the brain, in our experience, may serve as the starting point for the process of dementia; and, if there is no resulting irritative lesion, the progress of the dementia may be unaccompanied by any manifestation of active mental aberration. However, if the nature of the injury or the anatomical relations of the injured area afterward are of such a nature

as to cause pressure or hypostatic congestion, there is a marked aberration, usually in the form of extreme irritability, restlessness, or explosive outbreaks of violence. Again, these same manifestations follow a chronic pachymeningitis, and the occlusion of the pial veins in the frontal area.

In the absence of limited cerebral potentiality, we have not seen these manifestations, even in cerebral traumatism, pachymeningitis, or in connection with degenerative or destructive syphilitic lesions of the brain, although the motor and sensory functions may be seriously interfered with. The same is true with regard to the exigencies of the period of adolescence, and the strain of adult life; even where this is extreme and unusual on account of the incidence of disease, overwork or privation. These conditions are always present, and their somatic effects are apparent in every-day experience. They commonly, too, involve the general nervous system, affecting its sensory and motor functions; but they do not produce mental aberration or reduction in the individual in whom there is no evidence of instability or defect.

So far as the psychogeny of insanity is concerned, the laws of development and degeneration apply as definitely. When development is incomplete, that which is highest and most complex will be lacking, and the process of degeneration will begin with that which is imperfect or incomplete. And, as conduct represents our response to the influence of the conditions in the environment, it also indicates the extent of our ability to adapt ourselves to them. Mental processes do not arise *de novo*, any more than do the activities that result from them. Therefore, no matter how incongruous the conduct of the individual with relation to his surroundings, or how distorted his ideas, they must represent preexisting experiences and impressions which are wrongly related to the conditions in the immediate environment. By comparison of the conduct of the insane with the conduct of the sane, it will be found that, within the same limits, it does not differ in kind or quantity; and that in both cases it is directed toward the same general objects. From the standpoint of the individual, his conduct is the expression of his attitude toward his environment, in accordance with his understanding of his relation with it, and it is the reflex of the content of his consciousness con-

cerning that relation. In the insane, just in proportion with the loss of power of attention, and of the ability to relate and co-ordinate impressions coming from the environment, will be the aberration of response to these impressions, and the domination of the intellectual processes by pre-existing impressions. The confusion that results is the measure of the strain resulting from the imperfect relation and incoordination; while the degree of reversion shown by the conduct will indicate the amount of defect present. The extremity of the alternations in emotion, and the extent of the loss of control of the activities that are manifested in conduct will determine the reduction in mental capacity.

DISCUSSION.

DR. HUGHES.—Mr. President: I think it is quite timely in view of the many peculiar notions that are brought before the profession and the public in regard to the nature of insanity, that such a paper as this should emanate from this body, because I presume that in this body of practical alienist physicians, men who have studied the subject of mental alienation as Esquirol said it only could properly be studied, i. e., within an institution for the insane, where its various features may be discerned as we discern the other features of disease in other hospitals, ought to receive more rational consideration than it often receives from general practitioners.

There ought to be no difference of opinion about the fact that all forms and phases of mental aberration, as described in the present and the past literature, possess this one especial phase noted by an eminent psychiatrist about seventy-five years ago. That feature is the change of character criterion associated with disease of the brain involving the mind as constituting true mental aberration.

It matters not what form of mental disease be under observation, whether it be dementia præcox, dementia senilis, dementia terminalis, paranoia, melancholia, or any other of the forms of mental function perverted through brain disease and receiving the designation of insanity. It matters not what phase may be present, change of character connected with the fact of the disease involving the brain, and not proceeding from any external cause, operating upon the individual, constitutes ever and always mental aberration.

When mental aberration in any of its phases falls upon an individual, whether it be acute delirious mania, alcoholic mania of other forms, we find underlying all of them a change of mental character brought about by disease in that individual as compared with his natural self, or his normal family type; brought about by disease disordering the mind and not by influences operating upon the individual from without.

Before a court we should never fail to make the change of character a criterion our guide in maintaining the existence of insanity. The

lawyers and the jury should be made to understand that insanity comes about from disease operating upon the mind through the brain and not from other causes actuating the mind from without, though external causes may cause the disease of brain that causes mental aberration. This is true of all insanity, every form and phase of mental aberration not persisting from infantile brain diseases. Delirium is not necessarily an exception under this designation and this definition unless the patient can be aroused from it to a normal mental state.

The unity of insanity in a certain phase of its symptomatology shows in the fact that the mind, through the morbid state of the brain, manifests itself in a manner at variance with the natural character of the individual in his sane estate, and the true standard of comparison is always and ever the individual himself. The overlooking of the fact that disease of the brain causes change of character, announced by Andrew Combe in the early part of the nineteenth century, approved by our own great Ray and every one who has attempted to analyze Combe's description of mental aberration, holds good in regard to every single phase of mental aberration manifest to us in our day, if we accept or otherwise category the non-latent congenital forms such as epilepsy, imbecility, etc.

DR. HURD.—The paper contains much that is extremely excellent and yet it is simply a reiteration of what we have had many times before. Though insanity is a departure from accustomed habits of thought and acting, it does not follow that we should not have any distinction between the different forms of the disease.

I say to my students that there is nothing heaven-born in any classification of insanity. There are in fact no sacred terms of insanity in our delineation of insanity. Descriptions of cases and their arrangement as forms of disease, however are necessary because they enable us to explain to each other conditions which we find present. So that while all insanity may be considered in a general way the same thing, a form of deviation from the habits of thought of the normal individual, it is still a convenience to be able to differentiate different forms of mental disease.

I do not think the doctor has made it quite clear where he would place general paresis, for example, in this scheme. In general paresis we have a disease which is not necessarily engrafted upon a defective organization from childhood, and yet we have a series of manifestations which are directly due to lesions in the brain. It seems to me, therefore, that while the doctrine of the unity of insanity, as outlined, is very interesting, certain forms of the disease are not accounted for by the paper.

DR. TOMLINSON.—In a paper necessarily limited, it must be taken as granted that the proof for the conclusions expressed exists, and that the deductions have been made from the experience of the writer.

The term insanity was purposely chosen because it is a general one, and means unsoundness. Also because it is true that in insanity the un-

soundness is general; although manifested locally in that part of the organism which is weakest congenitally, and, therefore, least able to bear the strain. It is for this reason that terms limiting us to the consideration of mental manifestations alone are not only inaccurate but misleading; because they imply that the aberration exists independently of the other activities of the general organism.

It is difficult to conceive of the condition *mental disease*, because the mind, so-called, not being an entity can not be the seat of physical changes, either kinetic or morphological. Besides, the mind as expressed in direction is the same in kind and quantity as in its normal manifestations. The term *dis-ease* in its literal sense might be applicable to mental disturbance, but even here it is misleading because it implies that the condition is *sui generis*. In general medicine disease is regarded as a physical entity, and when you speak of tuberculosis, syphilis, gout, pneumonia, typhoid fever, diphtheria, etc., a definite condition is implied, which reduces both in kind and quantity the activities of the organ or part involved, and further implies changes in the organ either kinetic or morphological; whereas in mental aberration there is no such change, and the mental activity is still the synchronous expression of all of the activities of the organism. You can not distinguish, so far as the physical manifestation is concerned, between exaltation that has a rational basis, and that which has not! Excitement and depression are the same without regard to the nature of the cause that gives rise to them, and there is no way to distinguish, either physically or pathologically between the delirium associated with insanity and that occurring in the course of typhoid fever or pneumonia. Indeed they are alike to the extent that they both represent the effect of exhaustion upon an unstable nervous organization, and we have demonstrated experimentally that changes similar to those found in the brain in those who die in the delirium of insanity, pneumonia, or typhoid fever, can be produced in the lower animals by starvation and exhaustion by fatigue.

General paresis has been put forward as an exception to the contention in the paper; but no evidence has been presented to prove that the victims of general paresis are not either unstable or defective. So far as the mental manifestations are concerned, the excitement or depression present do not differ from similar manifestations in other insane persons; any more than do the grandiose or depreciatory ideas. The paretic is differentiated from other insane persons by the fact that there is a general and progressive involvement of the sensory and motor functions of the brain as well, and that this progression is comparatively uniform. It is claimed that general paresis is always a sequence to syphilis, but if this is true, and the lues is the direct cause of the general paresis, why is it that every one who is infected with syphilis is not a general paretic? Syphilis may show its effects in destructive lesions in the different tissues of the body, in the motor and sensory parts of the nervous system, and even in colloid degeneration in the frontal lobes of the brain with vary-

ing degrees of dementia, but we have never seen general paresis where there was no evidence in the personal history or heredity of the individual of limited cerebral potentiality as represented in the higher psychic functions.

It is the same with insanity in general. The exigencies and catastrophies of social, domestic, and business life are ever present, but it is only the occasional individual who is harmfully affected by them, and where he is so affected a careful study of his personal history will always show that his mental aberration is the evidence of the giving way of an unstable or defective nervous organization. Also, that the nature and degree of strain or stress may not be nearly so great as that borne by many others without mental breakdown.

PARESIS: A RESEARCH CONTRIBUTION TO ITS BACTERIOLOGY.

(From the Clinical Laboratory of the Cincinnati Sanitarium.)

BY F. W. LANGDON, M. D.,
Medical Director.

Paresis, paretic dementia, or as most British authors still prefer to call it—general paralysis of the insane—stands alone amongst the insanities as a disease presenting an unmistakable clinical history, a definite pathology as regards the brain cortex, a constant morbid anatomy and an invariably fatal outcome within a fairly fixed period of time. Not only is it unique, considered purely as a psychosis—but, in addition to its characteristic mental features, its extensive symptomatology eventually embraces the entire nervous system. Thus it is manifested by sensory, motor, reflex, visceral, vaso-motor and trophic impairment; and by reason of this widespread abolition of function, the entire organism suffers; hence the older term “general paralysis.” In fact, as is well-known to all of us, it is a general disease, its psychic features being incidental;—local expressions of the action of a widely distributed cause or causes. It is an important disease, by reason of its frequency as well as because of its fatality. Thus: Robertson¹ states its frequency at leading British institutions for the insane at ten to sixteen per cent; and in Naples he states that it constitutes thirty per cent of the admissions.

Notwithstanding the great practical importance of the subject, the actual cause of the disease has remained a profound mystery. The alleged causes which find place in our current text-books may be summed up as “Civilization and Syphilization,” or “Wine, Women, and Worry,” which to the thoughtful alienist are merely convenient alliterations which serve to occupy, but can never fill, the hiatus in our knowledge of the actual causation of the disease.

¹“The Pathology of General Paralysis of the Insane,” by W. Ford Robertson, M. D. Rev. Neur. and Psychiatry, Feb., Mar., April, 1906.

Any investigation, therefore, which may cast light upon the origin of such a disease is of prime importance, since it is in this direction that we must look for its prevention, if preventable, or its cure, if curable.

Of all the numerous attempts to solve the problem of the actual cause of Paresis, none have seemed to the writer so important as regards completeness of technique, fruitfulness in actual results attained, and promise of future usefulness, as those of Dr. W. Ford Robertson, Pathologist to the Scottish Asylums, and by him recently incorporated in a series of three papers which constitute "The Morrison Lecture for 1906."²

A brief synopsis of his investigations,³ which extend over a period of four years, and are of a most painstaking character, is as follows:

(1) Paresis is caused by a widespread infection of the organism by a specific bacillus—the *Bacillus paralyticans*. This bacillus possesses morphological characters and staining affinities which have led him (Robertson) to apply to it the term "diphtheroid." Nevertheless he is inclined to the view at present, that it is distinct from the Klebs-Loeffler bacillus of diphtheria. The *Bacillus paralyticans* is observed in two forms: (a) as single individuals grouped irregularly, (b) as a filamentous or thread-like form supposed to be due to rapid proliferation and non-separation of the individual organisms. This filamentous form is also supposed by Robertson to represent a "terminal" invasion of the victim.

(2) The *Bacillus paralyticans* gains access to the system by way of the respiratory tract and the alimentary canal chiefly.

(3) Syphilis, alcoholism, dissipation and the "strenuous life" generally are merely factors in "breaking down the general defences" against bacterial invasion.

(4) The invasion of the blood, lymph, and tissues by the *Bacillus paralyticans* gives rise to the production of "toxines" to

² Vide Review of Neurology and Psychiatry, Vol. IV, Jan., Feb., Mar., 1906.

³ Dr. Robertson gives full credit to several associates in his work; namely Dr. Douglas M'Rae, Dr. John Jeffrey, Dr. A. Ainslee, Dr. Chalmers Watson, Dr. Shennan and others; also to Dr. Lewis C. Bruce, who has made independent investigations along the same lines (British Med. Jour., June 29, 1901).

which the various trophic, degenerative, convulsive, and paralytic phenomena of the disease are due.

(5) The *Bacillus paralyticans* has been found (by Robertson) in the bronchial, alimentary, and genito-urinary mucous membranes; in the cerebro-spinal fluid, in the brain; in the walls of the cerebral blood-vessels; in the blood, the urine; and in other tissues, organs, and secretions when properly investigated.

(6) The living blood (especially the polymorphonuclear leucocytes) possesses the property of destroying the *Bacillus paralyticans* to a marked degree. To this fact is due the "remissions" so characteristic of the disease.

(7) As regards the frequency with which the *Bacillus paralyticans* is found in subjects of general paresis, Robertson, M'Rae, and Jeffrey, working with cultures of post-mortem material, found it in seventeen cases out of twenty; and in the remaining three cases it was found on making sections of the alimentary canal. In a series of twenty cases it was found constantly in the catarrhal exudations of the respiratory and alimentary tracts. In five of these cases the filamentous or thread-like form was found.

(8) "In seven consecutive cases of tabes dorsalis we have found the centrifuge deposit from the urine to contain abundant unaltered diphtheroid bacilli" (Robertson).

(9) As regards the effects of the bacillus on lower animals: "It was ascertained that the organism was non-pathogenic to guinea pigs." Three rats were fed for several weeks upon bread mixed with unsterilized broth cultures of the bacillus. After three or four weeks they began to show morbid symptoms which gradually increased in severity until the animals became acutely ill. At first they showed, especially, slowness and uncertainty of gait and drowsiness. Later they manifested distinct motor weakness, marked inco-ordination of movement, dyspnœa and great drowsiness. One rat was killed with chloroform when it appeared to be moribund. In the other two, the disease was allowed to go on to a fatal termination, which occurred about two months from the time of commencement of the feeding with cultures. Control animals remained healthy.

"Microscopical examination revealed in each animal a similar series of morbid changes. There was well-marked catarrh of the alimentary tract in all three, and a similar condition of the

bronchi in two, accompanied by some catarrhal pneumonia. The diphtheroid bacillus was found in the catarrhal exudations, but its detection presented the same difficulties as in cases of general paralysis. A large proportion of the nerve-cells of the cerebral cortex and spinal cord were markedly degenerated. The neuroglia, especially in the first layer of the cortex, showed slight but distinct proliferative changes. There was distinct increase of the cell-elements in the walls of the cortical vessels and also proliferation of the mesoglia cells and of the cells of the pia-arachnoid. In the two rats in the case of which the illness was allowed to go on to a fatal termination, there was extensive invasion by the filamentous organism already referred to. In one animal the threads were found in the lymphatics of the stomach, duodenum and ileum as well as in the liver and in the walls of the bronchi.

"In the last-named situation this invasion exactly reproduced the histological picture to be observed in the case of general paralysis from which the bacillus was isolated. In the other rat this filamentous organism was found in the walls of the stomach, duodenum, and ileum, and also in the capsule of the spleen and in a lymphatic gland. Beyond question these animals present evidence of the occurrence of many of the morbid processes that can be recognized in the nervous system of the general paralytic, but they survived too short a time for the complete histological picture to be developed."

For the details of the experiments upon which the foregoing brief abstract is based the reader must be referred to the intensely interesting lectures of Dr. Robertson.* As regards the practical outcome of these researches, it is evident that they not only point the way to a greater certainty in diagnosis of both paresis and tabes at a much earlier stage than is now possible, but that they also hold out rational hope of the discovery of means of prevention and cure—of both diseases.

On this point Robertson himself says: "Of more immediate interest is the question whether or not there is any reasonable prospect of these hitherto incurable diseases becoming amenable to treatment. On the ground of facts observed, I feel justified in saying, with considerable confidence, that there is. The general paralytic defends himself, and often with prolonged suc-

**Rev. of Neurology and Psychiatry*, 1906, Feb., March, April.

cess, by manufacturing specific bacteriolytic anti-bodies, with the aid of which the invading bacilli are repelled. Such specific anti-bodies can be produced in suitable lower animals and used as therapeutic agents, and it seems probable that with their aid it may be possible to induce a prolonged remission of the paralytic toxæmia. If this could be effected at an early stage of the disease, the damage to the nervous system would be slight, and the result might legitimately be regarded as a cure. . . . We are, at least, going to give such serum treatment a trial." The present paper does not presume to present an abstract of Dr. Robertson's investigations, for his lectures are, in themselves, an abstract of more than four years of laborious observation and skilled technique on the part of himself and colleagues. To abstract this would be to reprint his lectures entire. Those who wish to follow the subject through all of its intricate and fascinating phases must consult the original lectures.

It is evident, however, from the foregoing brief notes of some of this distinguished investigator's conclusions, that the question of the presence or absence of the *Bacillus paralyticans* in a case of alleged paresis or tabes, is an exceedingly important one. To contribute even in slight degree to the solution of such a vital problem is a work creditable to any laboratory and one upon which numerous investigators are doubtless already at work.

With a view to making such contribution, so far as opportunity affords, the writer has caused to be instituted in the wards of the Cincinnati Sanitarium and its Clinical Laboratory a series of observations on general paretics, the result of which are herein summarized.

The present paper is to be viewed merely as a "report of progress" up to date; of observations still under way and to be continued. Briefly they show:

(1) That the *Bacillus paralyticans* has been found by us in the blood, cerebro-spinal fluid, urine and urethral mucus, of paretics.

(2) That the bacillus is absent in the urine, pharyngeal, and tonsillar mucus of healthy control individuals and of those with other psychoses.

(3) It is to be regretted that our institution, being a strictly private hospital, does not often permit of study of post-mortem

material. This deficiency, however, we will be able to rectify in the future by reason of the kind courtesy offered by Dr. F. W. Harmon, Superintendent of Longview State Hospital, and of his associates, Drs. W. C. Kendig and J. W. Mann, who have co-operated heartily with the writer in the present investigation.

The material which forms the basis of the present research has been derived from 17 individuals. Of these 10 were well-marked paretics, clinically considered.

The *Bacillus paralyticans* was found and cultures obtained in three cases only. It is only proper to state, however, that in several of these, as detailed further on, only material from the pharynx and tonsils was examined. In others urine only. In one of the two which gave positive results, opportunity was afforded to obtain cerebro-spinal fluid, post-mortem, and the bacillus was found in abundance both in smear preparations and culture. Figures 2 and 3 of the accompanying illustrations are made from photo-micrographs obtained from cultures in this case (Case No. 3). Very good examples, not here figured, were also obtained in this case, in smear preparations from the fresh cerebro-spinal fluid, obtained post-mortem. In the second case of undoubted paresis in which the *Bacillus paralyticans* was obtained it was found in the urethral mucus. This was the only secretion examined in this case (Case No. 8).

In two cases of doubtful diagnosis, but presenting several paretic symptoms (Cases 11 and 12) the *Bacillus paralyticans* was found in one quite abundantly in the urine at two examinations, and on each occasion pure cultures were made showing the thread form (Fig. 1).

In one case (Case 13) of organic dementia (probably softening from vascular disease) cultures were negative as regards the bacillus. The same was true of a case (14) of dementia præcox, and of three control examinations of material from attendants and physicians who were in frequent association with paretics. For further particulars the reader is referred to the synopsis of cases and material examined which follows. As already stated our observations are still in progress under the restrictions which necessarily obtain in a private institution. It is quite possible, therefore, even probable, that the bacilli may be found in other cultures from patients here recorded as negative in results.

CASE 1.—P., female, age 38, married; two children, said to be healthy. Clinical diagnosis, paresis. Duration of symptoms, six months. Indifferent to family affairs, mildly elated, dementia, parietic speech, facial twitching, Argyle-Robertson pupils, syphilis not indicated. Mucus from pharynx and tonsil examined. Four cultures on Loeffler's serum and on blood serum made. Stain methylene blue. Result negative as regards *Bacillus paralyticans*. Staphylococci and streptococci found.

CASE 2.—McP., male, age 42, single. Traveling man. Clinical diagnosis, paresis. Syphilis in history two years previous to observation. Dementia, irritability, mild exaltation, one recent unconscious attack. Unequal pupils, iridoplegia to light. Material examined: Mucus from pharynx and tonsil. Four cultures made on blood serum. *Bacillus paralyticans* not found. Streptococci predominate.

CASE 3.—W. H. B., male, age 54, married. Business man. Tabetic type of paresis. Bedridden for 18 months. Advanced dementia, mildly elated, emaciated. From this patient smear preparations and cultures on blood serum and on agar were made from the cerebro-spinal fluid obtained post-mortem. By both methods the *Bacillus paralyticans* was obtained in abundance. Figs. 2 and 3 are from photo-micrographs of preparations from this case. Cultures were also made from this patient—ante-mortem—of blood and of mucus from pharynx and tonsils, with negative results as regards the *Bacillus paralyticans*.

CASE 4.—W. G. S., male, age 66. Financier and promoter. Clinical diagnosis, paresis, tabetic type. Duration of symptoms, about two years. Irritable and mentally weak for eight months; suspicious and elated by turns. Ataxia, Romberg symptom, Argyle-Robertson pupils, loss of sphincter vesicæ control. No knee-jerks. Mucus from tonsil examined. Cultures made on blood serum and agar. Result negative as regards *Bacillus paralyticans*.

CASE 5.—J. H. B., male, age 32. Physician. Married. Clinical diagnosis, paresis. Duration of symptoms, about two years. Depression followed by megalomania. Marked dementia. Maniacal at times. Pupils sluggish to light, slight ataxia of gait, diminished knee-jerks, stumbling speech. Material examined: Urine, smear of centrifuge deposit. Result negative as regards *Bacillus paralyticans*. Case still under observation.

CASE 6.—V. G. B., male, age 52, widower. Merchant and speculator. Clinical diagnosis, paresis. Duration of symptoms, two and one-half years. Elated, megalomania, marked dementia. Argyle-Robertson pupils plus knee-jerks, ankle clonus, parietic speech. Material examined: Urethral mucus. Two cultures made on agar. Mucus from pharynx and tonsil. Two cultures made on blood serum. Result, *Bacillus paralyticans* not found.

CASE 7.—J. G. E., male, age 45, single. Merchant. Clinical diagnosis, paresis. Duration of symptoms, three years. Convulsions, megalomania, marked dementia, hemiplegic, Argyle-Robertson pupils. Material examined: Culture on blood serum from pharynx and tonsil. Culture on agar

from urethral mucus, and smear from centrifuge deposit of urine. Results negative as regards *Bacillus paralyticans*.

CASE 8.—C. B., male, age 40, single. Merchant. Clinical diagnosis. paresis. Duration of symptoms, five and one-half years. Grandiose delusions, extravagance, marked dementia, Argyle-Robertson pupils, lost knee-jerks, emaciated. Material examined: Urethral mucus. Cultures on blood serum. Result, positive. *Bacillus paralyticans* obtained.

CASE 9.—E. H., male, age 50, married, wife insane, three children. Teamster. Clinical diagnosis, paresis. Duration of symptoms one week. Exaltation megalomania. Material examined: Two cultures on agar of urethral mucus. Two cultures on blood serum of mucus from throat and tonsil. Smear from centrifuge deposit of urine. Result, no *Bacillus paralyticans* found.

CASE 10.—E. B. C., male, age 46, widower. Merchant. Clinical diagnosis, paresis. Mild euphoria, marked dementia, ataxia, lost knee-jerks, Argyle-Robertson pupils, blurred speech. Duration of symptoms, about three years. Material examined: Smear of centrifuge deposit from urine. Result, negative.

CASE 11.—C. M. B., male, age 32. Clerk, married. Clinical diagnosis doubtful. Has been considered a case of dementia præcox most probably. Hereditary syphilis probable. Duration of symptoms, about two and one-half years. Depression followed by exaltation and violence. Untidy. Argyle-Robertson pupils, lost knee-jerks, gradual deterioration, mental and physical. Material examined: Cultures on blood-serum of centrifuge deposit from urine. Methylene blue stain. Result, *Bacillus paralyticans* found in thread-form. Illustrated in Fig. 1.

CASE 12.—E. G. S., male, age 51. Gambler and saloon-keeper. Widower, one grown child, healthy. Clinical diagnosis, uncertain. Probably an organic dementia of vascular origin. Duration of symptoms, eight months. Suspicious, apprehensive of personal injury, threatening to relatives. Destructive at times. Quiet and undemonstrative while under observation at sanitarium. Speech blurred. Material examined: Smear of mucus from tonsil and pharynx. Result negative.

CASE 13.—R., male, age —. Clinical diagnosis, organic dementia from softening or hemorrhage. Duration of symptoms, three years. Marked dementia, no evidence of delusions. Material examined: Smears from centrifuge deposit from urine and from pharyngeal mucus. Result negative.

CASE 14.—T. J. D., male, age 23, single. Student. Clinical diagnosis, dementia præcox. Duration of symptoms, three years. Material examined: Blood serum cultures from throat and tonsil and from urine. Results, negative.

The three remaining cases were attendants and physicians in frequent contact with paretic patients. Smears were examined from the pharyngeal and tonsillar mucus of each, with negative results as regards the *Bacillus paralyticans*.

ACKNOWLEDGMENTS.

The laboratory technique of the investigations here recorded and still in progress has been entirely in charge of Dr. Clayton B. Conwell, the efficient pathologist to the sanitarium. He has been ably and heartily assisted in the work by my associates of the medical staff, Drs. B. A. Williams and C. B. Rogers. The co-operation and valuable advice of Dr. Samuel E. Allen, Health Officer of Cincinnati, are also hereby acknowledged. To Dr. M. H. Fletcher is due the credit and our thanks for the accompanying photo-micrographs and the sacrifice of much time and labor on his part in preparing the same.

Dr. W. E. Schenck has kindly contributed to some of the blood work. As stated elsewhere, Dr. F. W. Harmon, Superintendent of Longview State Hospital, and his able assistants, Drs. W. C. Kendig and J. W. Mann have kindly placed at our disposal the wealth of material contained in their population of approximately 1200 patients.

Finally, the business management of the sanitarium, in charge of Mr. John C. Sheets, President, has, with characteristic liberality, freely placed at the disposal of the medical administration the necessary facilities, financial and otherwise, for the prosecution of these researches into the cause and nature of one of the most obscure and fatal diseases which can afflict humanity.

DISCUSSION.

DR. EYMAN.—I am exceedingly interested in this subject. I am carrying along some investigations in this same line. As it is known that forty per cent of the deaths in State hospitals are due to paresis, the unusual importance of the condition is realized.

Prof. Bianchi says that alcohol is the factor in the production of it. Many alienists say that syphilis is the cause.

In our institution we took a goat—we found guinea pigs immune—and inoculated it with cerebro-spinal fluid from a case of paresis during a congestive attack. We injected a little too much, however, and the goat died after a prolonged congestive seizure.

We had another series of experiments, however, and after six or eight months succeeded in immunizing a goat. From this immune goat we took what might be called the anti-serum. We then took four dogs. Two of these dogs were given the anti-serum for a considerable length of time, then the four dogs were given the same injection from the pure cultures of the organism which had been obtained from a parietic during a

congestive attack. The two dogs which had been given the anti-serum from the goat for a length of time appeared to be immune and subcutaneous injection had no effect upon them. The other two dogs which had not been treated with anti-serum gave all the manifestations of paresis. They howled, laughed, cried, had hemiplegic attacks, were typical cases of paresis.

The point might be that if this anti-serum would prevent an attack in the dog, it is possible it might produce a remission of the attack in the human individual. We have not gone that far. We are now immunizing with two cows, as it takes too long a time to get enough serum from the goat.

In twenty cases of general paralysis of the insane, excluding bacillus diphtheria and bacillus Hoffman, we found this special bacillus in fifteen patients. Two presented this bacillus in cases other than general paresis. The possibility of these cases being incipient general paresis must be considered. In fifty cases of paresis we found this bacillus in ninety-four per cent. This bacillus looks like bacillus diphtheria, but is not the same, having distinct morphological differences. It seems to prove the value of this line of work.

DR. WOODSON.—I would like to ask Dr. Langdon how early he finds this bacillus in general paresis.

DR. LANGDON.—I would answer the last questioner by stating that the youngest case—(there was some doubt in the institution as to whether he was a case of paresis or not), was only thirty-two years old. The duration of symptoms in that case is some two and one-half years. It must be confessed that there is still room for doubt in the diagnosis.

As regards the period in which the bacillus can be found, I would suppose that it could be found in the bronchial secretions long before there are any symptoms of the disease. That they must be there some months or years in ordinary cases considering the antagonism of the lymphocytes. Although those cases of inoculation reported by Dr. Eyman were much briefer, we must remember that they were inoculated experimentally, not naturally. I would also state that I have slides in which members may see all the original microscopic details which can not be presented in the photographs. You can see them very well with a one-twelfth oil immersion lens, and these members may inspect them at the McLean Hospital and get the details which characterize them.

EXPLANATION OF PLATE I.

FIG. 1.—Bacillus paralyticans, thread form. $\times 750$. Culture on blood-serum and agar of centrifuge deposit from urine. Case 2. Some streptococci are also present.

FIG. 2.—Bacillus paralyticans. $\times 1000$. Pure culture on blood serum from cerebro-spinal fluid. Case 3.

FIG. 3.—Bacillus paralyticans. $\times 750$. Pure culture on blood serum from cerebro-spinal fluid. Case 3.

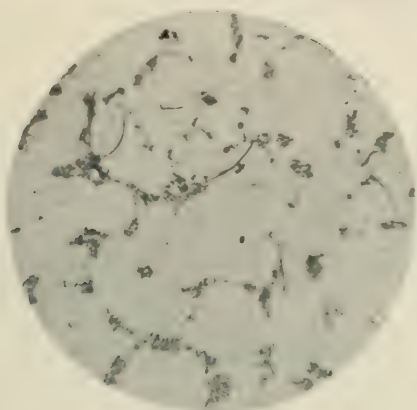


FIG. 1.

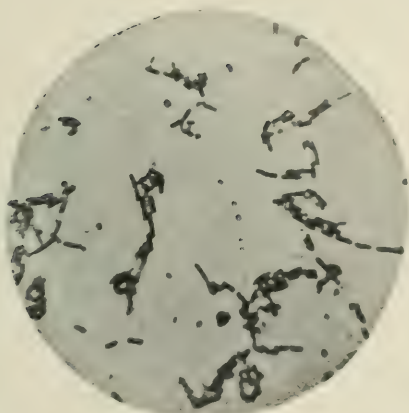


FIG. 2.

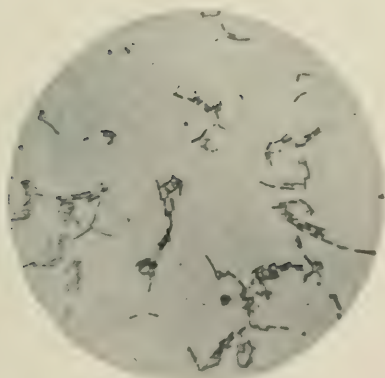


FIG. 3.

WOMEN NURSES ON WARDS FOR MEN IN HOSPITALS FOR THE INSANE.

By CHARLES R. BANCROFT, M. D.,

Medical Superintendent New Hampshire State Hospital, Concord, N. H.

From a purely theoretical point of view the employment of women nurses as far as is practicable on men's wards in hospitals for the insane would seem to be desirable. For women are better housekeepers than men; they possess as a rule the nursing instinct to a far greater degree than men; they exercise a refining and restraining moral influence that is not possible for the average male nurse to exercise over those of the same sex; and it is possible for a woman to render an environment homelike and attractive in a way wholly impossible of attainment by the average male nurse.

Theoretically speaking, I have for years been a believer in the presence of women nurses on men's wards. *Practically*, the realization of such a service is in the ordinary hospital somewhat difficult of attainment. Location and ward construction oftentimes embarrass the employment of women on male wards. But the chief difficulty in the way of securing this most desirable result is the scarcity of good material. With abundance of nurses who are possessed of the nursing spirit, who are properly educated and trained in their profession and who are imbued with the general hospital spirit, I believe the employment of women nurses on men's wards would not only be comparatively easy, but would serve to secure the results we are all so anxious to see attained on our wards.

First as to the character of the wards and the class of men patients to whom such assignment of women nurses should be made. This is a matter of vital importance; for, on the proper selection of wards must largely depend the success of the measure. Every well regulated hospital for the insane will have a judicious classification of its patients. Such classification is

largely clinical and represents a careful study of the various types of insanity. There will be found among the many wards of the hospital the following that are especially noteworthy because they include the ordinary variations of mental disease most frequently met with in any aggregation of the insane:

1. The hospital ward for the reception of recent and acute cases. This is practically an observation ward. The case newly admitted is examined carefully by the physician, and, unless there are contra indications such as violent excitement, homicidal tendencies, or such peculiarities of speech or conduct as would render him objectionable to other patients is assigned to the observation ward where he can be placed in bed for a longer or shorter time and his case be carefully studied clinically.

2. The hospital ward for the physically sick and infirm insane patient. Here will be placed such patients as have some actual physical disability (non-contagious) either medical or surgical in character. The ideal hospital for the insane would have two such hospital wards—one containing the infirm demented patients who need bed treatment and care, and the other containing more intelligent patients needing bed care from some acute temporary medical or surgical disability.

3. The ward or wards for the quiet demented insane—those patients that are harmless and inoffensive, but needing supervision and tactful management to prevent, if possible, further lapsing into the automatism so characteristic of the dementing psychoses.

4. The wards for the various classes of the quiet chronic delusional insane. Among these patients will be found varying degrees of intelligence. Many will be bright, active and interested in games and the topics of the day. Others less active, more secretive and more or less demented. Systematized delusions will be found among this class, but not of the type of the dangerous paranoiac. Most hospitals for the insane have many wards for the reception of this large class of delusional insane patients who do not dement rapidly, who as a rule are in a stationary condition of mind, who are not homicidal nor dangerous, and who make up the large working class of the hospital. As a rule, this middle class of quiet chronic insane persons exhibits no vicious tendencies and generally discloses a habit of

mind that is not aggressive, but rather is subservient to direction and supervision. Varying degrees of extremely slowly progressing dementia characterize this class of patients.

5. The wards for the active and disturbed patients. Among these wards will be found the acute and chronic maniac, the paranoiacs with dangerous tendencies, the extremely destructive and untidy patients who are prone to denude themselves, soil their rooms and commit destructiveness generally.

6. The wards for the convalescent and most intelligent insane. Here will be found those patients who are really recovering from the acute psychoses or those who, if they cannot be said to be recoverable, are still so little demented as to be distinctly appreciative of all the amenities and diversions that make life enjoyable. Of course there are many subdivisions of these different classes, many merge into each other, many seem to be transitional, passing from one division to another, and yet in the main every alienist recognizes these six groups and in one way or another endeavors to so study his individual cases that he may place them in one or the other ward as best befits their mental status.

In which of these several divisions of insane patients can women nurses be employed to the best advantage? In a general way it may be stated that the smaller the hospital the easier of accomplishment is the employment of women nurses on men's wards. For, in the smaller hospital there is less crowding, the classification is simpler and more complete and the liability of dangerous and objectionable patients becoming misplaced is less likely. In the smaller hospital with fewer patients in the different groups the supervision can be closer, individual characteristics can be more clearly recognized and the dangers of a wrong classification minimized. In the crowded wards of a large hospital it must be admitted that there is always the liability of a male patient being placed in the wrong assemblage, thereby increasing the difficulty of locating women nurses and reducing the number of wards in which one would feel perfectly secure in assigning women nurses.

This very discussion of the employment of women nurses on men's wards, however, which is no longer a novelty and which is really attracting increased attention furnishes an interesting commentary on the changed attitude of alienists toward the es-

sential character of insanity and its management. Less than 50 years ago the idea of a woman nurse caring for insane men would have been scouted, and I well remember the time in my boyhood when it was deemed safer to have a married couple in charge of the ward for more disturbed women so that in case of a sudden outbreak a man would be near at hand to render necessary assistance. The very fact that women nurses are now employed on men's wards and that their more extended employment on such wards is receiving continued discussion testifies to the recognition of insanity as disease and its consequent management like other diseases.

To return to the matter more immediately under discussion—the class of patients to be cared for by women nurses and the condition of their employment. As a rule, when women nurses are assigned to men's wards I believe it is better to copy the methods in vogue in general hospitals. The woman nurse should be in charge and not a subordinate. She and her assistants should feel the responsibility of their position under the physician. The care of the ward and the detail of the nursing should devolve upon the women nurses of whom one is to be the head nurse. The head nurse must feel that she is the responsible one directing the work and reporting to the physician. There must of necessity be men attendants, but their position should be that of the general hospital orderly whose duty it will be to execute the orders of the head nurse and attend to such portion of the work as cannot be performed by women as bathing, shaving, attending to the toilet room and other details that would obviously devolve upon the man. By this method the women nurses feel the responsibility of their position. They recognize the importance of their duties, and the fact that the moral support of the hospital is back of them gives them confidence under conditions that would otherwise be embarrassing. When the nurse feels that the conduct of the ward and the care of the patients devolve upon her, that the physician in charge looks to her for the carrying out of all medical and ward instructions, then she recognizes the dignity of her position, and if she is a woman of force and character, she experiences no more difficulty in the management of her ward than does her sister nurse in the general hospital.

It is of little use to have women nurses on men's wards under

a head male attendant. To do satisfactory work the woman must be in charge herself, feel the responsibility as well as the assurance that such a sense of responsibility affords. Women are naturally better housekeepers than men, they are better nurses than men, but their qualifications never show for what they are worth unless the women are in the superior position and feel that they have the moral support of the hospital to aid them in the execution of their natural talents.

Neither is it advisable for a man and wife to be employed on the same ward. Unless the man is a nonentity, my experience has been that he will take the initiative, doing the very things it is desired the nurse should do, either for fear that his wife will be overworked or because he wishes to take the lead himself, thereby defeating the very purpose sought. I do not wish it inferred that I am not in favor of married people being employed in the wards because I believe that the securing of faithful married employes on the wards is one solution of the vexatious "help" problem so harassing to every superintendent. But I do feel that it is desirable that a man and his wife should be located in different wards and that the field of their respective labors should be entirely distinct.

Now as to the class of patients for which it is most desirable that women nurses should care. Of the six divisions above enumerated I think there is no question that women nurses can be employed to the greater advantage in the hospital reception ward, the hospital ward for the physically infirm insane patient, and the wards for the convalescent and most intelligent insane.

On the wards for the active and disturbed insane there is no doubt that women nurses had better not be employed. It may be a question whether it is desirable for women nurses to have charge of the wards for the quiet demented insane, and the quiet chronic delusional insane.

Personally, I am a strong believer in the admission hospital building with observation wards, examination rooms, electrical and hydro-therapeutic apartments—a building in fact equipped with every appliance for the thorough examination and treatment of mental disease. The new patient will receive his introduction to the hospital in this building, the whole atmosphere of which is that of the *hospital* rather than the *asylum*. He will be exam-

ined at the entrance office assigned to his bed in the observation ward or to a separate room adjoining the ward if circumstances so require. The head woman nurse will assist the physician in the examination and will locate the patient in the bed assigned. Her assistant women nurses will then have charge of the case. The initial bath will be given by the orderly and such special attention as may be required, but the nurses will see that the bed is attended to, the medicines administered, the diet given, the personal attentions supplied just as in the male wards of a general hospital. The great majority of new men patients will submit willingly to these attentions from women nurses, and as far as my limited experience goes will be impressed by the hospital spirit that pervades the place and the ministrations of trained women nurses.

Of course some male patients will on admission prove to belong to the fifth or disturbed and violent class, if so they will immediately be assigned to their respective wards entirely independent of the hospital building. There may be dangerous paranoiacs obviously at very first sight unfitted and unsafe for the care of women nurses and these must necessarily have their proper consignment. But the large majority of admissions can with safety be placed in the hospital ward under the care and observation of women nurses with such assistance from an orderly as is necessary. Transfers later to other localities in the hospital may be necessary, but there are few cases that cannot be admitted, located, and cared for in the manner outlined. The moral effect of a first impression cannot be ignored, and that the ministrations of kindly nurses in an environment suggestive of the hospital rather than the mere house of detention, exerts a favorable influence upon the newcomer, there can be no doubt.

The presence of women nurses on the wards for the physically sick and infirm is, I believe, extremely desirable. The actual nursing of patients sick in bed is better done by women than men. Women can give the many little touches so grateful to the sick far more adroitly and easily than men. They will feed the sick in bed, keep the bed clean and free from wrinkles, and make the sick room or ward more attractive than is possible with the average male attendant. In every hospital for the insane, there are many cases of terminal dementia, some of whom are afflicted

with motorial disturbances. These cases must be cared for in bed and constitute a most difficult class to nurse. My personal experience has led me to feel that all these extremely demented patients, especially the senile dementias and the third stage paralytics, receive far better care from women nurses than men. They keep the ward sweeter and cleaner, make the patients themselves more comfortable than is possible with men nurses and certainly comfort in a most gratifying manner the feelings of visiting relatives and friends, who are at once reassured when they see that women nurses have the immediate charge of the patients.

The presence of women nurses among convalescent men patients is, I believe, extremely desirable. They give better care to the ward than men. Men can polish floors, make the brass pipe shine, make excellent beds, but they invariably neglect the corners, the hidden places, unless carefully watched. Out of sight is out of mind with the average male attendant. On the other hand good women nurses are more thorough in the details of ward work—they have an innate capacity for making the rooms look attractive and homelike. But of even more importance than the fact that women are better housekeepers than men is the influence that their presence exerts over male patients of the convalescent and intelligent class. There is no doubt that good intelligent women on the ward do exercise a restraining influence over men—both patients and attendants. There will be a cessation of profanity, of the tendency to tell stories of the *double entendre* order and of a disposition to be rough and disorderly in the presence of intelligent women nurses. The men will exercise self-control, which in itself is a matter of remedial benefit to themselves as well as a contributing factor to the personal comfort of such patients as are naturally quiet and gentlemanly, and who would be greatly annoyed by the unrestrained conversation and hoidenishness of others who are not as well bred or so well mentally.

As to whether women nurses had better have charge of wards of the third and fourth-class of insane patients, viz.: the quiet, demented insane and the quiet, chronic delusional insane, may be a question admitting of some discussion. In the first place, among these two classes, there is no sick nursing to be done. These patients are usually able-bodied men with good appetites,

who sleep well, and who need such diversion as will tend to enlist their decadent energies in normal and useful directions thereby preventing further deterioration. The farm, the shop, games both out-door and in-door, mental occupation of some sort, according to the inclination and capacity of the patient, will furnish the various means of employing the minds of these patients. The nurse's duties with these classes will be limited therefore to ward management and such social and intellectual diversion as might naturally suggest itself. The nurse in her capacity as housekeeper would in all probability find her chief duty. If one were sure of enlisting the services of the right kind of woman one would undoubtedly derive great benefit from the influence of her good judgment and supervision over ward details, but the scope of her usefulness would be far less than in the hospital or convalescent ward.

There would be with these two classes the uncertainty of ever feeling quite sure of the patients' impulses and motives. Many of these patients are reticent. One never can tell what slumbering passion may be aroused. In all such patients inhibition is weakened; a suggestion through the avenues of the senses may be sufficient to kindle passions that might endanger the safety of the nurse. While such danger might be exceptional, everyone at all familiar with the insane must admit that it exists. This is another curtailment of the nurse's usefulness with either of these classes. I certainly should feel that in wards for these patients the constant presence of male attendants would be a necessity, and the question naturally arises whether under these conditions sufficient benefit to the insane patient will accrue to make the adoption of women nurses expedient. We must admit, however, that the influence of a good woman on the wards for such patients must be excellent in restraining attendants from being rough in conduct and language, as well as inhibiting patients from similar tendencies who are not too demented to be susceptible of such influence. It is obvious that not every woman nurse would be suited for such positions, that the selection must be made with great care, and that male attendants must always be present on such wards. The experiment is unquestionably worth trying.

One reason for placing women nurses on wards for male pa-

tients is the apparently steadily increasing difficulty of securing desirable men attendants. Each year witnesses a decreasing supply of competent men for these positions. Thirty years ago there were plenty of young men in the rural districts available for attendants upon the insane. The majority of these men came from good families, were temperate, desired steady employment, and under training displayed good judgment and made faithful, reliable attendants. The supply equalled, and indeed exceeded, the demand. To be sure, many intended to make the asylum the stepping stone to some other employment as soon as they had earned sufficient money to make a start in some definite occupation—but they were imbued with a well-defined purpose in life which made them desirable attendants as long as they remained in the institution. There were then as now men who would disgrace any position they might fill. But I think my confreres will agree with me that in those days the number of these undesirable men was far less than it is at the present time. The preponderance of really available good men rendered it possible to make good first selections out of applicants presenting themselves.

For the past few years the desirable young men seeking asylum positions have seemed to the writer appallingly few in number. The majority are shiftless, lazy, addicted to bad habits and apparently seek positions to tide them over a period of temporary pecuniary stress. Many of these constitute the asylum tramp class so familiar to every superintendent. These men travel about under assumed names, are utterly without honor or principle, remain in an institution long enough to contaminate the service and seem to have no definite ambition in life other than to evade honest work. A search for the causes of this ever-increasing number of inefficient young men would constitute an interesting sociological study. Whether the dearth of good men is due to the degeneracy of the rural stock out of which the applicants come, whether it is due to a certain spirit of the times under the influence of which young men prefer sport and idleness rather than steady and definite employment, or whether again it is to be sought in the multiplicity of desirable positions constantly opening up and which enlists all the desirable men, leaving the inefficient—the fact remains that the number of available good men for attendants seems to be surely diminishing. For this

reason, if no other, the placing of women nurses on wards for men has seemed to the writer one solution of a difficult problem.

The training school for men nurses has not been so productive of good results as similar training for women. In the first place men are not attracted to professional nursing as a life-long employment. Few men are adapted to this kind of work. The demand for male nurses outside of an institution is comparatively small. The incentive, therefore, for men to train themselves for professional nurses is slight. For these reasons it cannot be expected that advertised training schools for men will be likely to attract to the service any number of desirable men. On the other hand training schools for women nurses in hospitals for the insane have been eminently satisfactory. They have introduced a higher standard, a more efficient service, and out of this intelligent body of well trained women it is to be presumed that a correspondingly efficient nursing force can be placed on certain male wards in the manner previously outlined.

This subject of the placing of women nurses on wards for men has recently attracted some attention among our Scotch brethren, and the arguments pro and con have been spiritedly discussed in recent numbers of the *Journal of Mental Science*. Scotch psychiatrists are eminently practical in the management of their asylums, they have always manifested a studious desire to benefit the patient and to guard against submergence of the needs of the individual patient in the routine management of a large hospital. Whatever they may say, therefore, concerning one of the most important phases of institution management is manifestly of interest.

In the October number for 1903 of the *Journal of Mental Science* is an instructive article on "Female Nursing of Male Patients," by Dr. Turnbull. He advocates the nursing of male patients by women nurses in the convalescent wards, in the wards for bed patients, and the placing of women night nurses in the convalescent wards. He says: "The difficulties which one looks for in dealing in this way with male insane patients have vanished when put to the test of practice; the care of the patients has been greatly improved; the patients, as a rule, appreciate what is done for them, and submit readily to be guided by the nurses; and the nurses take readily to the work and find pleasure

in it—and, indeed, they often say that the male sick room is more easily managed than any of the wards on the female side. It accentuates the feeling that there is really nursing to be done in asylum duty.”

Dr. Turnbull's views met with general endorsement in the discussion of his paper with two or three exceptions. One objection was that women nurses on men's wards would be likely to sexually excite the patients to such a degree as to be detrimental to their welfare. Another objection was that if the head positions on wards for men were filled by women nurses promotion for men would be debarred and training for male nurses would necessarily become abolished, and as a result an inferior class of male attendants would be attracted to the service. Another objection offered was that hospitals for general diseases and asylums were entirely distinct institutions, that they could not be run on the same lines, that the attempt to consider insanity as a bodily ailment and undertake its nursing with women nurses as in a general hospital was an absurdity and an exemplification of what the speaker declared “to be a part of this great fad that has come over us to run everything on hospital lines.” One speaker thought economy might be an argument in favor of the adoption of women nurses on men's wards for the reason that women could be employed at a lower rate than men. One writer advocates “the opening of a small ward staffed by men where all male cases are admitted and passed on to the wards staffed by women as soon as is judged right.” He is led to this conclusion because there are always in the hospital certain male cases who in the presence of women will become erotic, or who may become violent toward other male patients, and the women nurses are not physically strong enough to come between the patients, separate them and prevent serious conflicts. The general consensus of opinion, however, in Scotland would seem to be in favor of the employment of women nurses on men's wards as far as is practicable.

Concerning the points brought out in the discussion, it is questionable whether the danger of sexual excitement has not been exaggerated. With reasonable care such patients can be eliminated from the wards staffed by women nurses. The danger is not sufficiently great nor frequent to lead to the abolition of

the better care and good moral results attendant upon the presence of women nurses.

It is doubtful whether the employment of women will effect a greater economy. For the head nurses must be graduates of the very best type and ought to command as good wages as men. It is quite likely that the employment of these head nurses and their assistants together with the necessary orderlies will bring the cost of ward management up to as high a figure as if there were only men attendants. Motives of economy should not lead us to staff men's wards with women nurses, but rather the desire for a better service independent of the pecuniary item.

Neither do I have any sympathy with the attempt to decry the hospital idea on the ground that it is a mere passing fad. If anything has been established by the experience of the last few years it is the fact that insanity is disease. As far as is practicable insanity should be managed like any other disease. Wherever and whenever it is possible patients thus afflicted should be accorded the same skilful care and kindly nursing that is accorded any ailment. The hospital treatment of insanity is not a fad, and that the nursing of this disease should proceed as far as is possible on the lines of the hospital nursing of general sickness is to my mind an evidence of our better understanding of the real character of mental alienation.

The idea that the employment of women nurses on wards for men will discourage desirable male attendants from seeking these positions, and that as a result the character of the latter will deteriorate, will not in my estimation hold true in the United States. As previously mentioned, good male attendants are none too common in this country. It is because too few really good men are attracted into this service that good trained women nurses are desired. Experience has already demonstrated that trained women nurses on the male wards not only leads to better care of the patients, but that their presence has been a positive benefit to the men attendants themselves. Unless I am very greatly mistaken, an intelligent women-nursing staff on selected male wards will result in a better morale among the male attendants and a greatly improved condition in the patients.

My own personal experience has thus far extended to the employment of women in the convalescent building, the hospital

ward and the summer cottage occupied by quiet, intelligent male patients of the chronic class. The results have been so gratifying that an extension of this service seems not only feasible but eminently desirable along the lines suggested in the earlier pages of this paper. The subject is not new. Many institutions have for some years had men's wards staffed with women. Still the employment of women nurses on wards for men has not by any means become general. The institutions adopting this system of nursing are the exception. Has not general experience demonstrated its practicability and has not the time arrived when it is desirable that every well appointed hospital for the insane should have certain wards for its men patients staffed with women nurses?

In conclusion I must repeat that when women nurses are placed on wards for men, I believe that they should occupy not a subordinate position. They should have charge of the ward and its management, the medical officer should give his orders to the head nurse, and she and her assistant nurses should be held responsible for their execution. The selection of these nurses is important. Not every woman is fitted for these places. Only such nurses as are thoroughly imbued with the hospital spirit, are dignified and possessed of superior judgment, tact and nursing qualifications should be selected for these important positions. With judicious selection of the proper individuals I feel that the employment of women nurses on the sick wards, the admission wards and the convalescent wards, will be attended with the very best results, and the extension of the service to wards for quiet chronic and only partially demented men, while not so sure of success, is certainly worthy of trial.

THE MALE NURSE.

By GEORGE T. TUTTLE, M. D.,

Medical Superintendent McLean Hospital, Waverley, Mass.

Men are employed in the care of the sick—in general hospitals chiefly as servants of the women nurses, in hospitals for the insane as attendants or nurses for the men patients, and in private families for certain cases. Is there a need for such service? Is it satisfactory? If not, what can be done to improve it?

There is no question that men are needed in the care of the sick in general hospitals, to move patients from place to place, *e. g.*, to and from the operating-room, to give baths to men for cleanliness or for therapeutic purposes, to assist them in the use of urinals and bed-pans, to give enemata, to prepare them for certain operations, to change certain dressings, in exceptional instances to pass the catheter and wash out the bladder, and for other like service which is more properly rendered by a man than by a young woman.

There would also seem to be a similar need for his services occasionally in the care of those sick of acute general diseases in their homes when strength is required—of old men who are partially helpless, of genito-urinary cases, of active delirium, and especially of insanity. The home treatment of the insane has increased considerably in the last 15 or 20 years, and there probably would be a still greater demand for men nurses for this work if an adequate, a satisfactory and not too expensive supply were available.

In hospitals for the insane there is an increasing tendency to employ women nurses in the men's wards. There is no doubt that this can be done more extensively than has been the custom heretofore except in a few hospitals, perhaps to the greatest advantage in reception wards, in those for the physically sick and infirm, and for the convalescent. The benefits of such service are many and some can scarcely be over-estimated. Among them

are the better and more attractive serving of food; the making of special articles of diet for the sick; economy of hospital property; better housekeeping generally and a more domestic atmosphere to the wards which contributes to comfort and contentment; the entertainment of patients; the more careful supervision of their clothing; the prevention of a tendency to degeneration in dress, conduct and conversation which is certain to result when men are associated without the presence of women; the more natural fitness of women for nursing because of their motherly instinct and their readiness to respond to the appeal of sickness and suffering; the giving a greater prominence to the hospital idea and the corresponding lessening of the custodial feature of hospital life; the tendency to prevent harsh treatment of patients; the reassuring effect on the friends of patients, and the tendency to lessen the distrust and prejudice which the public has toward hospitals for the insane. The employment of women also offers a partial solution of the problem of securing an adequate number of satisfactory men for nurses in these hospitals.

The argument that modesty would forbid placing an infirm ward in the charge of women might be made with nearly equal fairness against the nursing of men by women under any conditions. The nurse learns things and has experiences in her vocation, from which young women in ordinary life are most carefully shielded, but she should not be subjected to the ordeal of trying to care for the highly excited and wholly irresponsible; certain erotic patients; the very untidy, who require frequent tub baths and changes of clothing; or the more intelligent but actively suicidal men who must be under constant observation, especially while bathing; neither is it fitting that she should be the nurse or companion of those patients who engage much in out-of-door games or who take frequent excursions from the hospitals, sometimes of several days or weeks duration; nor can she take charge of working patients. It is more appropriate for women to direct and nurse men sick of bodily disease, confined to the bed, who are to be under their care but a short time, than to live intimately associated with, and to have the sole direction and personal care of, men who are physically well, who stay in the hospital a long time, perhaps the remainder of their lives, and who need only a judicious direction of their conduct rather than

nursing for bodily illness. The employment of women in infirmary and reception wards of hospitals for the insane is very similar to their employment in the male wards of general hospitals.

But while one might question the propriety and advantage of placing women in charge of the larger number of men in a hospital for the insane, the beneficent effects of her presence in the wards with these patients may be obtained without holding her responsible for their personal care.

At the McLean Hospital, where there are rarely enough bodily-sick patients who can properly be associated to fill an infirmary ward, women have been employed to assist in the care of men for 29 years. At present there is but one ward, that for the most excited patients, which has not its graduate woman nurse with a ward-maid to assist her. She is responsible for the domestic affairs of the ward—has charge of the dining and serving rooms and the supervision of the housekeeping generally; she makes special articles of diet for sick patients, looks after the laundry, makes little repairs of clothing, sees that the clothing of each patient actually on hand corresponds with the list kept in each ward, assists in the nursing of patients confined to their beds; also in entertaining the men, with some of whom she walks on the grounds, drives and plays golf.

A man has charge of the ward and is responsible for the personal care of the patients. The woman is responsible only for her part of the work, which is that of woman in the home, and her criticisms of the assistant male nurses are made through the head nurse to the supervisor. This division of service has existed from the beginning and has been found satisfactory for the needs of this particular hospital.

It would appear then that after the possibility of the advantageous employment of women in the men's wards is exhausted there still is need of men nurses.

For the purpose of ascertaining the character of the work done by men a circular letter was sent to many hospitals and to directories for nurses, some of whom have men on their registers. To the question, "Have you difficulty in securing a satisfactory class of men?" answers were received from 79 general hospitals and from 144 hospitals for the insane.

GENERAL HOSPITALS.

	Difficulty	No Difficulty
With schools for women only.....	47	11
With schools for men and women.....	18	3
	—	—
	65	14

HOSPITALS FOR THE INSANE.

	Difficulty	No Difficulty
With schools for women only.....	9	1
With schools for women, some instruction given men.	9	2
With schools for men and women.	44	18
With no schools for men or women.....	35	26
	—	—
	97	47

It would appear from this table that there is considerable difficulty in securing a satisfactory class of men for hospital work but that hospitals without schools for men have less difficulty than those that have such schools or are less exacting in their requirements. Most general hospitals did not answer this question, thinking it sufficient to say that they employed no male nurses, the orderlies not being reckoned as such.

Why so many reported difficulty in securing satisfactory men may be indicated perhaps by a list of the reasons assigned for the consecutive discharge of 765 men by 19 hospitals for the insane.

Intoxication	197
Abuse of patients.....	132
Away without permission	66
Insubordinate	61
Undesirable	59
Disobedient	57
Sleeping on duty	47
Theft	28
Untrustworthy	27
Unsatisfactory	21
Negligent	19
Untruthful	15
Unfaithful	11
Immoral	11
Entered service under false name.....	8
Aiding patients to escape.....	4
Drug habit	2

It will be seen from these figures that the larger number were discharged because of bad character and habits. During the same period 199 left the service without due notice of their intention.

It is no doubt true that as a rule the men who engage or attempt to engage in nursing the sick are not so satisfactory as the women. Making all due allowance for a lack of natural qualifications as compared with women there still are objections based on lack of education and refinement and on their character and habits, which make some men impossible as candidates for the nursing profession.

At the McLean Hospital during a period of four years, 1902-1905, 79 men out of 157 probationers and accepted candidates in the training school left for various reasons before the completion of the course of study, while during the same period only 32 out of 155 women failed to graduate.

The inquiry sent to directories for nurses to ascertain the quality of service given the public by men nurses, who have survived the discipline of the hospital schools and who have also met their educational requirements, brought answers to the question, "Are their services generally satisfactory?" from 25 directories who had male nurses on their list and from five others who had had experience with them. Twenty-three of these answers were in the affirmative and seven in the negative. Since directories usually receive reports from families as to the character of the work done by nurses whom they supply, they would most certainly know of any serious complaints. It should be said that not all of these men were graduates of any school, since some directories register as experienced nurses those who have served one year in a hospital, and as graduates those who have had a two years' service, without regard to the question of graduation or even of instruction in a school.

These answers indicate, so far as they have value, that the average graduate male nurse of to-day renders the public fairly satisfactory service, which could indeed be improved, but which probably is much better than the hospitals themselves receive from their attendants, who are not instructed, and from the pupil nurses in their schools.

It is a common complaint from superintendents of hospitals for the insane that in applying for this work many of the men do not

intend to make it a calling or profession but merely a stepping-stone to something else; that they simply want a "job," have no real interest in the work and look upon any systematic instruction as an accident of the service, to be tolerated but not desired. Some go from hospital to hospital seeking an easy place; and while they acquire some knowledge of the duties of a nurse they may at the same time have learned methods which no good hospital would wish introduced into its service.

In view of the evidence already presented there can be no doubt that something should be done to raise the standard of the male nurse. I do not wish to be understood as saying that hospitals do not have many good men. They do; but there are many who prove unsatisfactory and the problem is how more of the good men can be induced to take up the work. It is something, and a necessary step, to offer them an education in nursing, but this is not enough; they should also have the assurance that after acquiring such an education they have before them an adequate career.

To learn something of the opportunity a young man now has in this country to acquire a nurse's education and training, a circular letter was sent to which replies were received from:

GENERAL HOSPITALS.

With schools for women only.....	223	
¹ With schools for men and women.....	22	245

HOSPITALS FOR THE INSANE.

With schools for women only.....	10	
With schools for women, in which some instruction is given men by text-books and lectures.....	11	
With schools for women—schools for men dis- continued	2	
¹ With schools for men and women.....	62	
With no school for men or women.....	66	151

¹ The U. S. Bureau of Education, 1903-4, reports 668 hospital schools, not for the insane, with 61,587 beds, having 14,408 women pupil nurses, an unspecified number of them having 673 men pupils; also 56 hospitals for insane, epileptic and feeble-minded with 69,343 beds, having 1644 women pupil nurses and, in 54 of them, 988 men pupils.

Four of the general hospital schools for women give lectures to their orderlies; four formerly did, but have discontinued it; and five propose to give systematic instruction in the near future.

While it was necessary for private enterprise and benevolence to begin the work of training nurses and demonstrate its value to hospitals and to the public, there are few such independently organized schools in the country to-day. The work is now chiefly in the hands of schools organized and maintained by the hospitals themselves for the education of their own nurses and for the advantage of their patients. Let no one think, however, that this is a matter of economy for the hospital. The women pupils, to be sure, are individually paid less money while receiving their instruction than was formerly paid, but more nurses are required to allow them time for study and to put in practice the refinements of nursing which are now taught; teachers for special branches must be paid; graduates receive more money than formerly; so that the total cost of the nursing service is greater than before the establishment of schools.

The work was begun in general hospitals but in them it has been confined chiefly to the women, although so large a proportion of these hospitals have difficulty in securing satisfactory men. Most of the 22 general hospitals who responded to my questions and who offer a course of instruction for men such as they give women, with certain obvious exceptions, are of small size and have few pupils. The only notable instance of a school for men in a general hospital is that of the Bellevue Hospital in New York.

GENERAL HOSPITAL SCHOOLS FOR MEN AND WOMEN.

Location	No. Hospitals	No. Beds	No. Women Pupils	No. Men Pupils
Maine	1	50	16	1
New Hampshire	1	35	15	1
Massachusetts	1	230	82	2
New York	4	765	143	76
Pennsylvania	3	650	88	17
Alabama	1	30	20	6
Michigan	2	225	68	11
Minnesota	1	50	20	2
Colorado	1	100	12	6
Washington	1	50	12	1
California	6	1150	239	26
	22	3335	715	149

Instruction of the men in the service of the hospital is compulsory in 15, voluntary in seven. The length of the course of study is two years in 11, two and a half years in one, and three years in ten. Three of the schools giving a two years' course to men give a three years' course to women. The money compensation in these schools varies from \$4 to \$25 a month; the average minimum being \$8.73, the average maximum \$13.71. For orderlies in the general hospitals, who answered the question, the pay was from \$10 to \$45, the average minimum being \$19.40, the average maximum \$25.90. In general hospitals the orderlies as a rule are addressed by their given names. So long as they are Mike, John and Harry, so long will they be merely servants and porters.

The men in hospitals for the insane have more responsibility and do a higher kind of work. The advantage of giving them systematic class instruction was early appreciated, although the work was begun with women as in general hospitals. It has been extended until to-day it stands, so nearly as I can ascertain, as stated in the foregoing table.

The dates of establishment of these 62 schools for men and women are as follows:

1882, 1; '84, 1; '86, 1; '87, 2; '88, 3; '89, 3; '90, 1; '91, 3; '93, 2; '94, 4; '95, 3; '96, 10; '97, 4; '98, 2; '00, 4; '01, 4; '02, 3; '03, 5; '04, 4; '05, 1; '06, 1.

The number of men nurses employed in these hospitals is about 3650. In 32 the instruction is compulsory for all who enter the service of the hospital; in 30 it is voluntary for the men, although in nearly all it is compulsory for women.

The length of the course of study is two years in 56, and three years in six. Formal instruction is given during the two years' course for six months in five, seven months in 13, eight months in 14, nine months in one, ten months in one, and for an unannounced time in 22. Five of the schools giving a three years' course do not announce the number of months' instructions in each year and the third year is optional. In one, instruction is given for eight months of each year.

A diploma is given by 56 and a certificate of proficiency by three, while three give nothing as evidence of completion of a course of study.

Money compensation in the 62 hospitals with schools for men and women varies from \$14 to \$50.62 a month, the average minimum being \$22, the average maximum \$33. In the 11 hospitals with schools for women in which some instruction is given men by text-books and lectures the pay varies from \$15 to \$50, the average minimum being \$25.10, the average maximum \$33.63. In the 66 hospitals with no schools for men or women it varies from \$10.50 to \$55; average minimum, \$23; average maximum, \$33.

An attempt was made to ascertain the amount and character of the instruction given in the various schools of the country in hospitals for the insane, but it is practically impossible to learn accurately from the written replies and the printed announcements received, even the number of hours instruction given and of its quality one can learn less—indeed practically nothing. One's estimate of this must be merely a matter of inference from the names and positions of the instructors in the schools.

There is not the uniformity here in regard to this that there is in Great Britain, where the Medico-Psychological Association has prescribed a course of instruction for all schools in hospitals for the insane in the United Kingdom. The regulations² of the Medico-Psychological Association of Great Britain and Ireland for "the training and examination of candidates for the certificate of proficiency in nursing and attending on the insane" require, with few exceptions, that "every attendant must be trained in an institution for the treatment of mental disorder for not less than two years," including the probationary period of three months. The system of training includes: "(a) Systematic lectures and demonstrations by the medical staff of the institution. At least 12 lectures, each of one hour's duration, must be given in each year of training; and no attendant will be admitted to examination who has not attended at least nine lectures in each year. (b) Clinical instruction in the wards by medical staff. (c) Exercises under the head and charge attendants in the practice of nursing and attendance on the insane. (d) Study of the 'Hand-Book of Nursing' issued by the association. Other books may be used in addition. (e) Periodical examinations, the nature and frequency of which are left to the discretion of the superintendent,

² Jour. Mental Sci., April, 1904.

but one examination at least should be held in each year. The scope of training must be such as to impart a knowledge (1) of the main outlines of bodily structure and function, sufficient to enable attendants to understand the principles of nursing and of 'first aid,' especially with regard to the accidents and injuries most likely to occur among the insane; (2) of the general features and varieties of mental disorder; (3) of the ordinary requirements of sick nursing, and especially of the requirements of nursing and attending on the insane." Provision is also made for regular examinations to be held twice yearly at every institution in which there are candidates for certificates of proficiency. These examinations are partly written, partly oral and practical. The questions for written examinations are prepared by the examiners in nursing appointed by the association. The oral and practical examinations are conducted by the superintendent of the hospital and a co-adjutor, who shall take at least as great a share in the actual examination as does the superintendent. Later in the year (1904) the length of the course of instruction was increased to three years.

There is in this country as yet no such uniformity of instruction and no one central examining board. Boards for the examination and registration of nurses are being established in some States and may in time take the place in every State of the Central Examining Board of Great Britain and Ireland. The maintenance by law of a minimum of requirement for the State registration of nurses will tend to raise the standard of education in all the training schools of the country, and this appears to be one of the chief reasons for the establishment of these boards of registration.

There is no doubt that most schools in the United States give more instruction to their pupils than do the English and Scottish schools. As in Great Britain, much of the instruction is given by the hospital staff, which is something of a tax on their time, but there are compensating advantages in an increase of interest and knowledge on the part of the staff, a better study of cases if they are to be used for demonstration, and a more accurate knowledge of the capacity of the nurses than could otherwise be obtained.

In schools of good standing a lecture and also a recitation from

some text-book are required each week. In addition to this there are various demonstrations in practical nursing which come at irregular intervals, the exact number of which could not be ascertained from the answers to a letter of inquiry.

The subjects generally taught are: Anatomy, physiology, hygiene, bacteriology, nervous diseases and insanity and their nursing care; general medical and surgical diseases with their nursing care, accidents and emergencies, materia medica, food and dietetics, and the observation and recording of symptoms. In addition to this many schools give practical instruction in bandaging, preparation of the sick-room, the operating room and of the patient for operation; physical training, massage, hydrotherapy, electricity and urinalysis. It would appear from this that the schools in the United States give a somewhat wider range of instruction than is given in similar schools in Great Britain, although it is by no means certain that the instruction is more thorough or that the nurses are more competent in their work. Nurses are wanted, and are valued not so much for their theoretical knowledge as for the quality of service they can render, and if any criticism is to be made of our present methods of training it is that we teach too much theory, give too many lectures and hear too many recitations, and give too little of the practical demonstration which is needed, together with sufficient theory and explanation so that the nurse can do his work intelligently, and may know why he does it in a certain way rather than in any other. So far as is possible such demonstrations should be given the nurses in the wards, and they should have an opportunity to practice the instruction received under the eye of the teacher. Such matters as the making of beds for different purposes, the care of patients' rooms, of the toilets, of various utensils, of sinks, dining-rooms, serving-rooms, the proper serving of food, the care of patient's clothing and of the patients themselves, must of course be demonstrated. But the nurse also should be taught cooking in the kitchen, knowledge of drugs in the dispensary, urinalysis in the laboratory, and any knowledge of physical training, massage, hydrotherapy, bandaging and the like, which is not taught practically is almost worthless. While talking about the normal mind and insanity, it is of the greatest assistance to a correct understanding and appreciation of the subject to

assign patients to be observed and reported upon as to the condition of their mental states. Patients should also be used to show the different forms of mental disease, as would be done at a clinic for medical students. Nurses have the patients constantly before them in the wards and have a better opportunity for observation than the physician. They should therefore be taught how to observe, what to observe, and how to record their observations for the physician's use.

In most hospitals for the insane the opportunity for nursing cases of general medical and surgical diseases is quite limited. Some schools are able to provide such experience for their pupils by arrangement with a neighboring general hospital. Such is now a part of the course in the McLean Hospital school. All of its women, and those of the men who so elect, spend eight months of the three years' course in the school of the Massachusetts General Hospital in Boston.

The object of our training schools is to provide competent nurses for service of the hospital and incidentally of the public. The more capable and satisfactory the graduates, the sooner will come the time when men as well as women will be induced by a public demand to make it a vocation; while every incompetent male nurse graduated tends to perpetuate and extend the bad reputation which unfortunately he has formerly had.

Even now the man's position is better than was that of the woman nurse before the establishment of training schools.

Forty-six of the 62 hospitals with schools for men reported in regard to the success of their graduates in private nursing as follows:

No difficulty in getting work.....	21
Difficulty in getting work.....	2
Few attempt private nursing.....	12
Some go into other business	5
Most go into other business.....	6
	—
	46

That the male nurse has not yet an assured career is shown by his lack of eagerness for the instruction; by the fact that in one-half the hospitals it has been thought necessary to make instruction in the training school voluntary, while in most of

these same hospitals it is compulsory for the women; that some general hospital schools give a two years' course to men and three years' to women. It also is shown by the necessity of paying him nearly as much while getting his education as is paid the men employed in hospitals without schools. When there is a more general appreciation of such a course of study he will be glad to accept a much smaller money compensation, as are the women in the general hospital schools who are paid much less than formerly, and who in some general hospitals give their time and service for the instruction received, in exceptional instances even paying a tuition fee of from \$50 to \$350 for the course. This time has not yet come, but I have faith to believe that there is to be a wider field for the male nurse in private practice. There are many now who receive from \$25 to \$35 a week and who are spoken of in terms of commendation by physicians and families.

Do the graduates of schools remain in the service of the hospital? Answers were received from 54 of the 62 schools as follows:

All remain in the service.....	4
Most remain in the service.....	12
Many remain in the service.....	10
Some remain in the service.....	16
Most leave the service.....	12
	—
	54

At the McLean Hospital there is such a demand for the graduates of its school that it is difficult to keep enough for head-nurses of the wards. Aside from the pecuniary attraction of private nursing many of the best men study medicine or dentistry, or find some other work more congenial, with less of the restrictions which are thought necessary for hospital discipline, more home life, and better pay.

To keep the men needed for the places of head nurses it would seem necessary to give them a thorough knowledge of their work which only can make it attractive and enable them to bear with equanimity the annoyances incident to the care of such patients; dignify their position by giving charge of all the men's wards to men and not to women; pay enough to make the position

attractive; allow them to marry and live outside the hospital, furnishing them on the grounds of the hospital or in the immediate vicinity comfortable tenements at a moderate rental. It is the custom in England and Scotland more than in this country for hospitals to build houses for their nurses and employees. In 1903 the Lanark District Asylum, in Scotland, with 35 such cottages claims to have solved the difficulty of keeping good men.

There is nothing more to be desired by a hospital for the insane than a permanent corps of head nurses, who would be loyal officers of the hospital, who would give character to the service, and who would be capable of giving valuable instruction to the pupil nurses.

NIGHT NURSES FOR THE INSANE.

By C. R. WOODSON, M. D.,

Medical Superintendent Missouri State Hospital No. 2, St. Joseph, Mo.

From November, 1874, the time at which Missouri State Hospital No. 2 was opened for the reception of patients, until the first day of January, 1897, the institution had not been provided with night nurses, but had been provided with night watches, varying in number from two to eight. The duty of the night watch was to make a round hourly, sometimes oftener, and possibly in many instances, not so often. The night watch was supposed to pass through every hall or ward at least once an hour, and carried with him or her a kerosene lantern. When not making rounds, they were supposed to be in the administration building. As a result of such service, suicides were not infrequent. Death from exhaustion of maniacal patients was quite common. The morbidly suspicious were greatly intimidated, and in many instances made miserable from being locked in a room. The sick could not receive proper attention, the violent were not controlled as they should have been, and a generally inefficient and unsatisfactory service was rendered.

On the first day of January, 1897, the night force was increased from eight to thirty-five. Since that time, as much or more effort has been made to provide a full quota of night nurses as a full day force. In fact, if it becomes necessary to have a short force, either at night or day, we invariably drop off some member of the day force, that the night force may be kept intact.

Since the inauguration of this system, the first thing we did was to do away with all of the inside locks. It was soon found that that was not satisfactory, and the major part of the inside doors were removed. We continued to remove doors until the present time. With a population of about 1400 patients, we have about 30 inside doors, and these are for single rooms. So satisfactory were the results following the removal of the doors

that in the erection of buildings during the last six years, we have discontinued the inside door. In fact, we do not use an inside door frame, but finish over the rounded brick with plaster. The atmosphere following this change has been greatly improved, as the abominable chamber has been wholly discarded. Patients have as free access to the toilet rooms at night as during the day. It is exceedingly rare that a patient becomes violent, and they seldom become violent enough to be placed in a room with a door for a single night. I make freely the declaration that there are not three inside doors closed in State Hospital No. 2 any night in the year. There is one night nurse on each violent ward, and one night nurse on each hospital ward. On quiet wards, in some instances, the night nurse looks after two wards. The doors for the entire flat of the respective sides are left open, and it is seldom necessary for one nurse to have to leave his service to assist another.

In my early hospital experience, superintendents were trying to find some light material for chambers, so they could not be used as offensive or defensive weapons. Every hospital man is cognizant of the fact that the heavy chamber is very objectionable, but the weight is far less objectionable than other things which could be mentioned.

The idea of locking one, two, three, four, five, six, seven, or eight patients in a room or dormitory, expecting patients to remain quiet, to sleep well, and to get well, is not only absurd, but is inhuman. The morbidly suspicious should certainly not be blamed for imagining that there was danger when locked up in a remote room of an institution with those who may or will domineer over them. The foul atmosphere associated with closed doors and the use of chambers, and the numerous contused wounds, as a result of such method, are justly entitled to condemnation in unmeasured terms.

The presence of the night nurse upon the reception of a case of acute mania is highly important, as these cases, under appropriate treatment, furnish a large percentage of recoveries, and lack of timely attention increases our death rate. A timely word to the violent from the vigilant and prudent night nurse is equally important.

Since the inauguration of this system during the period of nine

years and four months, there have been three suicides in State Hospital No. 2, and two of these were due to the carelessness of the night nurses. With a good nurse the sick and feeble receive proper attention, and a suitable temperature of the various apartments is maintained. Patients sleep better, are better satisfied, more easily controlled, and get well more quickly. A warm midnight meal is served on the respective wards for each nurse, and instructions are given to feed patients who have been eating irregularly or unsatisfactorily, and the nurse tries to persuade such patients to partake of a midnight meal. We have not found it necessary to have more than one nurse on a violent ward. Patients are not awakened by the opening of doors or the flash of the lantern in their faces. A 16-candle power incandescent electric light burns at the end of each hall and in each alcove. The rear halls and toilet rooms are as light as day. Attacks from violent patients upon the night nurses are not one-tenth as often as upon the old so-called night watch. Contused wounds are a thing of the past.

I have heard some superintendents make the remark that the patients' in their institutions were too violent for the open door system. The fact that the patient has liberties and privileges, of itself, tends to lessen the violence of the patient. The fact that the patient can get up and go to the toilet-room when he wants to, get a drink of water, or even get up and look down the hall, is a source of satisfaction; it makes him less rebellious, less obstinate, and less violent. The fact is, a common cur may be chained up till he becomes as vicious as a bull-dog, but let him have an opportunity to expend his pent-up forces, give him freedom, and little children may play with him with impunity.

Having some one with insane patients day and night, dealing firmly, yet kindly and gently, has a subduing effect, and, I may add, that in enforcing this line of treatment we do not quiet the patients with motor depressants or hypnotics. We do not administer as may as two hypnotic medicines any night in the year. A warm bath, a cold bath; a warm pack, a cold pack; a glass of warm milk and mid-night meal; the care and attention of a skilled nurse are better than hypnotics, better than restraints, and better than closed doors.

THE TRAINING SCHOOL IN THE INSANE HOSPITAL.

By EDWARD B. LANE, M. D.,

Late Medical Superintendent Boston Insane Hospital, Boston, Mass.

I assume no one will deny that an insane hospital is maintained primarily for the benefit of the public. Its first aim is to provide a safe place for those who would do harm if allowed their liberty and at the same time afford all remedial agents to restore every patient possible to the community. Our insane are peculiarly entitled to every consideration at the hands of the hospital authorities, the agents of that public who have taken great authority upon themselves in removing that patient from his home, usually against his will, and deprived him of his liberty by due process of law. The insane patient is confined not because he has wilfully violated the rights of society, but because as the result of disease, he has become unfit or unsafe to remain at large. It has always seemed to me that for this very reason our insane hospitals should be compelled to furnish the best of care, a skilled medical and nursing staff, abundant nourishing food, comfortable quarters and every remedial agent that is approved. Those who seek aid in general hospitals or almshouses do so voluntarily, because they believe they can be cared for better there than in their home surroundings. The public owes a peculiar debt to its insane wards which it may be said it cheerfully pays as a rule. The passing generation saw the care of the insane evolve from the jail and almshouse standards to the modern hospital, as we call it.

A number of philanthropic people, appalled at the prevalence of insanity in our midst, have earnestly advocated and attempted to put in practice the hospital method of caring for the insane. They urge upon us a rapid extension of the hospital methods and the adoption of the externals of the general hospital. With this reform our insane hospitals have adopted training schools for nurses. While a few insane hospitals have been born with train-

ing schools, more have achieved training schools, and many have had training schools thrust upon them. We now have "wards" for "halls," "nurses" instead of "attendants," "sleep charts" for night reports, etc. This movement is a good one, and I hope to see even further progress made in the same direction. The presence of the terrible scourge of insanity will always stimulate the community to use every device for its cure or prevention.

I wish to discuss with you to-day, not the question of the propriety of training our nurses—for I think that has already been answered in the affirmative—but the details of adaptation of the general hospital training school to the needs of the insane hospital. From what I said as to the duty of the insane hospital to the public, it follows that the training school should be for the benefit of the patients in the hospital, and we must not let the zeal of the reformer lead to the error of regarding the hospitals as maintained for the benefit of the training schools.

I was much interested in listening a few years ago to a very able plea made by Dr. James Russell, of Hamilton, Ont., for the asylum *versus* hospital. Many present to-day will remember the Doctor's caution lest we make too hasty an adoption of the hospital. Let me quote a few sentences from him: "If the torchlight of science has burned with greater brilliancy within the hospital than within the asylum, whose fault is it? Is it not a confession of weakness to commit an act of grand larceny by assuming a name we have not earned and thus take a short cut to popular favor!"

Again he says: "I propose now to show that the word hospital in its modern application is a misnomer when applied to an institution for the insane, and that the future evolution of the asylum must be on educational and industrial lines instead of hospital methods." He then points out that in his own hospital only 5 per cent require strictly hospital treatment, and 20 per cent, while physically healthy, are possibly curable, leaving 75 per cent as incurable, and later he says: "In all our large asylums there is a perfect Niagara of mental and physical force going to waste, and how to utilize this force from an economical and psychological standpoint is the great and burning question which confronts us to-day."

We must all agree that the strictly hospital work in our institutions is a small affair. It is important and often hitherto perforce slighted. Now the larger hospitals have well equipped infirmary wards, but practical difficulty in classifying our sick insane has hindered the development of a special hospital department. The American public is utilitarian, and is willing to spend money if that will cure the insane in our hospitals, but hesitate to provide so expensive quarters for those incurably ill. But we all know that curable or incurable the sick patient needs a great deal of attention and must have it. It is also true that many of the sickest curable cases, for a time, must be treated in the wards for extremely disturbed cases. Even could we diagnose the curable from the incurable on admission, what practical advantage would there be in maintaining duplicate wards for the two classes. I would have the infirmary in the insane hospital in charge of a nurse who had had experience in both an insane and a general hospital. This ward would attract pupil nurses who would learn there the essentials of sick nursing. And the nurse who acquits herself well in such a ward with its peculiarly difficult work has acquired a valuable experience. She will find herself equipped for a useful career in private practice in nursing medical cases. But with not over 10 per cent in our infirmaries, how are all our nurses going to get that experience? And this brings me to the first difficulty in the training school for insane hospitals. The inexperienced applicant is misled by the term hospital training school and is disappointed when she finds 90 per cent of her work in the school is with the physically well. This objection has long been met by an arrangement whereby those ambitious for a wider experience may enter a general hospital for a brief supplementary course. This is an excellent thing where it can be done. But even then what inducement is there for a bright young woman to take half her course in an insane hospital when the general hospital offers her the full course of more interesting work in its own wards? Many hospitals for the insane have been unable to promise such a post-graduate course for our training school pupils, and I have seen several after spending two years in an insane hospital begin at the bottom in a general hospital.

It would seem that we in the insane hospitals must demonstrate

by our good work that we can furnish the general hospitals with a superior class of applicants so that it will be for their advantage to take our graduates and allow them to enter at an advanced standing. The insane hospital has long been a training school for superintendents of the general hospitals. The insane hospitals are large and the organization is well perfected. Institution methods are as well, if not better, learned there than elsewhere. The pupil nurse has as good (I believe better) opportunities to acquire her preliminary studies of the training school in the insane hospital as in the general hospital. The experiment is now being made where institutions of learning shall provide a course of instruction to fit young women for nurses and relieve the hospital of the literary work of its school. That is well if it insures a definite standard of general education for probationers, but I believe such instruction given in the hospital alternating with hours of duty on the wards will prove more stimulating and valuable.

Among the advantages urged for a training school in our hospitals is that it will attract a superior grade of women. This is undoubtedly true if the school gets a reputation for good work. I believe such a reputation may be acquired even though our annual list showing the number of graduates who have married and their social status be not published. Still that may help.

To one who contemplates opening a training school in an insane hospital I would urge the importance of increasing the staff from 10 to 15 per cent. The school work demands about that proportion of the pupils' time, and if no allowance is made for that it simply means that the patients will get so much less care. Nor would I insist on every nurse being a member of the school, while such a state of affairs may be ideal it is not always practicable. I have found that such a rule leads to attracting an inferior grade of the attendant class who come for the smaller wages paid the training school members, and care nothing for the instruction given. There is a vast amount of necessary routine work that is done by the old-fashioned attendant more satisfactorily than by the young pupil nurse who is, in accordance with training school ideas, assigned in rapid rotation to various posts of duty. Here the general hospital methods, it seems to me, are unsuited to our needs. In the general hospital the average resi-

dence of a patient is very brief. The ward of a general hospital is a sort of laboratory where one with a brief and serious illness is received for a special purpose. Various groups of surgical cases may be found—the typhoids and pneumonias, the contagious cases, etc., are grouped according to the diagnosis. The nurse has no social duties to perform, her work is arduous and exciting. She may be assigned from one ward to another as occasion demands with little harm to the patient. But in the insane hospital for the vast majority of patients it is a home. Each patient is peculiar—it takes a long time to adequately learn his delusions and fears and gain his confidence. Such a knowledge once gained becomes an asset which is lost if the nurse is suddenly assigned elsewhere. The management of the congregate dining room cannot economically be changed once a month, or even once in three months. I feel that in such places the well-paid, experienced attendant is of great service. The time may be coming when the training schools of our hospitals will have graduated such an army of women (who have not married) that the permanent positions may be filled with them and the attendant may not be needed.

There is no question but that the careful, systematic instruction of new nurses in the essentials is a great help. It is a great improvement over the old haphazard method where an attendant might or might not learn what to do in an emergency. Now we feel sure that at the end of her course of training each nurse has had an opportunity to learn each essential. Few new attendants that enter our hospitals understand approved methods of house-keeping. They can learn this in an insane hospital fully as well as anywhere. They should learn the care of the sleeping room, the care of the dining room and the serving of food. But, again, to learn to do it properly she must not be expected to do too much in a given time, or she learns to slight and hurry her work. Nothing in connection with our work of caring for the insane is more important than serving the food and watching the patients at meal time. I would omit all lectures on obstetrics, care of the eye or throat, if necessary, and give their place to practical drill in serving of food to patients who are unwilling to eat. The nurse trained in the general hospital sees little or nothing of this

class of patients and cannot instruct our pupils in this most necessary work.

The bathing of patients and the care of the mouth and hands are learned more thoroughly in insane hospitals than in others. Because in these hospitals a large number of patients not only will not do these things for themselves, but even resist their being done so often, that every nurse must find a great deal of this. The prevention of bed sores is taught far more thoroughly than it can be in general hospitals. After these elementary duties comes the most essential thing in all work among the insane. That which we all appreciate, but find it so difficult to carry out with our limited appropriations and large numbers of half-educated attendants. That is the individual work with patients. Each patient that we hope to see improve requires much personal attention from his or her nurse. The patient must be studied and observed with care. His individual peculiarities must be considered, and then tactful and most persistent effort will often be rewarded. Now this work is very different from the daily work of a nurse in a surgical ward. But the experience is valuable and successful and should receive high marks in school work. While I do not claim such work is not noticed in the training school, it is not given the relative importance that I feel is its due. Marks or lectures on the medical sciences far outweigh those given for such earnest and practical work. But the greatest need to carry on this true training is that of competent instructors, and I feel we are following a will-o'-the-wisp when we look to general hospital graduates for our teaching nurses. They should in every case be selected from the most successful attendants. And when they inspire in their pupils the desire to get a dull or depressed patient to occupying their hands or their mind when such a pupil shows by her efforts that she has converted an untidy into a tidy patient, such work should count as heavily in her marks as a college thesis does in work for a degree. I wish to point out another danger in this matter of head nurses whom we employ to drill our pupil nurses in their ward duties. This head nurse must find time to do this important work and we must not allow her time to be frittered away filing reports, listing clothing, and other necessary drudgery of ward work. If it be said that such

work is not for pupil nurses, I say much more is it not for their teachers.

I have in mind a very bright nurse who made herself beloved by her patients, who got an unwilling patient to eating, and after three weeks' effort the weight chart curve had reversed its incline from downward to upward. This woman was kind and very successful with obstinate patients. She always had a smile. She was very quick to grasp her ward instruction, but it was only by stretching things, under the "training school method," that she got marks enough to pass. She simply could not write a tolerable examination paper.

If we must use the marking system, let us make it mark as we want the record made, that is, give credit for successful nursing work, and not let the literary work usurp its place. No family *cares* whether the nurse whom they employ for their sick one knows the number of bones in the body or not, if she knows what to do for the invalid. The educated nurse will know these things, and it is proper to give her credit for such knowledge, but our training school diploma should not be issued to a pedant who cannot nurse and be refused a nurse who is not sure whether the aorta is in the hand or the foot.

Nurses, like poets, are born and not made, but I will concede that one is successful in neither calling in these days without some education. I merely wish to emphasize the fact that the diploma should certify to good nursing work as well as to perfect recitations in the class room.

I regret that our insane hospitals used the term training school, as it is liable to be confused with that special school found in the surgical and lying-in ward. But it is too late to correct this, let us make our bow of acknowledgment to the general hospital for showing us the value of systematic training of its nurse and turn to our own problem of instructing the care-takers of the vast army of insane who make their home for many years in our institutions. Teach them to care for their restless charges with the minimum of leather or canvas restraint. Show them how by patient care, careless patients are made tidy. Let them learn the art of feeding patients with no appetite and do not, above all, let them lose sight of the personal relation so necessary between the nurse and the patient.

I may be wrong, but I have the feeling that with all our improvements in nursing and feeding the insane, we have in some way lost that intimate personal feeling between the recovered patient and the kind attendant who saw her through her trouble. It may be the result of organization, but we should strive to restore it.

DISCUSSION.

DR. GEORGE STOCKTON.—I desire to say that at the Columbus State Hospital, Columbus, Ohio, we have had a training school for nurses for eight years, and I believe that it has been one of the most important improvements ever introduced into our State hospitals. We get better service from our nurses, and we get a better class of applicants.

In institutions where they have a large farm connected with the hospital, it is necessary to work out a number of the patients. For this reason it is seldom that we can spare our male attendants to enter the training school, and the reason for this is that they have so much outside work to attend to. I am satisfied that it is the training school which has turned the attention of the superintendents to the advisability of employing female nurses on the male wards. I never heard it seriously advocated until after training schools were established. For two years our cottage for the care of the acute curable insane has been under the charge of a female nurse, one of our graduates, and I have found, as Dr. Bancroft advocates in his paper, that it is best for her to have exclusive charge of the cottage, and everything connected with it. We have not had the slightest trouble for over a year, and our administration has been successful from the very start.

Our tubercular tent colony, in which we have under treatment over a hundred cases of tuberculosis during the season, has been under the successful charge of one of our women graduate nurses exclusively. The patients are well taken care of, and we have very little opposition from the male nurses who work among the men, performing duties that it would be unpleasant for a woman to do. However, the women nurses have absolute charge of the tents, diet, etc. In our hydrotherapy department we have a male nurse, a graduate, who takes charge of the bathing of the men, massage, etc., and a woman graduate nurse has charge of the same details among the female patients.

I wish we could have in our institution more of the male nurses attend our training school. I think it would be an advance in the care and treatment of the insane.

This has been a very interesting symposium, and I have been very much profited.

DR. S. B. LYON.—I think that as a rule the male attendant has not received justice, either from us or from the community. We are apt to

think the male attendant is such because he cannot get anything better, and that his grade in society is a naturally inferior one. My experience has not justified this idea. Of course, bad men may creep in among them, but the majority I have known were self-respecting, and up to the average intelligence.

We also ought to realize that our hospitals are training schools for patients as well as for attendants; that we cannot always be present with the patient, in the hours he is walking about unhappy and delusional, and we must rely for his companion on our attendants, and engage the best men we can get. Many of them have a fair education; some have failed perhaps in more active careers, but are fully capable of the duty we ask of them, and are more suitable than women as companions and associates for men patients.

When we inaugurated our training school, it seemed to me it should be for the men, if for any one. We could get very good women, with a natural bent for nursing, but the men, as a rule, have not done much private nursing, and need to be instructed. So we established a training school for men, as well as women, and this has been going on for 11 years, and I think the results have justified the effort, not only in better care for the insane, but in making better companions to the patients. We have many educated and refined patients, and it is not enough to put a spade in their hands, and tell them to work. They must be amused, and got out of their morbid conditions, and we find intelligent male nurses and companions a great assistance to us in restoring patients to their natural places in life. When the men patients want to go to the theatre, play ball, go to the city, etc., the competent male nurses can go with them, which women nurses could not do properly, and with manly companions, patients often brace up, and show a renewal of interest in manly pursuits, which is often a forerunner of their restoration to normal life.

If good trained men are not to be obtained, we may have to rely on trained women attendants upon the men patients, but where good men can be obtained, and can be well instructed, I believe they should be the responsible caretakers of the majority of men patients, who are not sick in the ordinary meaning of that term, and who need the stimulating companionship of other men. If women are in responsible charge of the men, you can only get an inferior grade of men, who will be willing to take the irresponsible and degrading subordinate positions, such men as are no proper companions for male patients of intelligence; and an important means of moral treatment is lost.

DR. EDWARD COWLES.—Mr. President, the most striking impression this discussion has made upon me is its indication of the progress that has been made in our work. At the meeting in 1886, just 22 years ago. Dr. Tuttle presented an account of the beginning of the McLean Hospital training school. At that time certain of the principles which he has discussed to-day were, already laid down and had been put in practice. May I be pardoned for indulging this reminiscence.

There is underlying this whole matter certain fundamental principles which, it is interesting to note in all that has been said to-day, have been passing through a long period of testing. After some labor in the work of a general hospital training school, in applying the principles there recognized to a hospital for the insane I found that there must be some underlying reason for the difficulty that had existed for half a century in the many attempts that had been made to train attendants for the insane.

It seemed to me then that the fundamental principle was this: You want things of your nurses; you want certain services of a certain quality. You want young men and women to do these things; you must do things for them. There must be a fair exchange of values in such a matter. It is said of an old-time Boston merchant, that he was in the habit of reciting his maxim: "No trade is a good trade unless it is good for both parties."

The principle of the establishment of training schools was a recognition of the practical fact that the nurses ought to receive that which would repay them for giving their services to the hospital. Practically you see, as far as we are concerned, it is easily determined that they must be given a profession, and be attracted to the hospital for the insane by a like fair return for their service.

With men, it is a more difficult question. It hung fire with me for a considerable time. Drs. Tuttle and Bancroft have set forth the difficulties of the proposition as to how to arrange the duties between the men and women in the wards. From experience with orderlies in a general hospital it was evident that invitations to come to a hospital for the insane to do orderly work would not be acceptable to men of the character required at the McLean Hospital; so the attempt was made to give the men a nurse's education. Some equivalent must be given to the men as it is to women, either in the way of education or of compensation as wages. By a practical combination of these two plans the value of the education can be kept for the benefit of the hospital in the proposed making of permanent homes for at least a few selected men to give character and steadiness to the service.

DR. C. K. CLARKE.—The experiment of educating the male nurse in Ontario has not been largely followed. That the male nurse may be successfully developed has been demonstrated by young Scotchmen who have received their education in that country. I have had a number of them in my institution and have been delighted with the male nurse provided with the Scotch asylum certificate. Many female nurses also have come over, though my experience with the latter has not been so successful, and I do not think they rank with the Canadian nurse. I think the explanation is that we get girls of better social standing and education in our own country. I think the United States has appreciated the fact that the Canadian trained nurse is a success. However, the explanation for the dearth of satisfactory male attendants is that in Canada and the

United States the movement for the young man is altogether to the West where he has abundant opportunity to improve himself.

I have taken a great interest in this matter for many years; in fact, Kingston had one of the first training schools for nurses for the insane.

Several striking things have been impressed upon me. The first is that the general hospital nurse does not as a rule make a success of nursing the insane, but the almost ideal nurse—Dr. Hurd and Dr. Cowles, I think will agree with me in saying this—is the one who has commenced her education in the insane hospital and finished in the general hospital. Provision should be made for post-graduate courses for asylum nurses in general hospitals, and if similar courses for hospital nurses could be arranged in hospitals for the insane, so much the better. Now that the psychopathic wards in hospitals are the fad, it is proper that the nurses should have an extended knowledge of the nursing of the insane. I hope the day is not far distant when this will be the case in Canada. I think Dr. Burgess will bear me out, also Dr. Beemer, that it is possible to educate the male nurse.

DR. BURGESS.—I can fully endorse what Dr. Clarke has just said with regard to the good qualities of the men from the old country holding the certificate of the British Medical Association. I have had several such and they certainly are among the best male attendants I ever had. I might also say that during the past two or three years I have had several medical students on my staff, young fellows who took the winter course and who have to make their own way in the world. I now have two of these who have been with me for three summers and they certainly make very desirable attendants. The disadvantage is that you lose them in the fall when the session begins, but they are so good that I am very willing to help them along by giving them employment during the vacation.

DR. TOMLINSON.—In considering the subject of training schools for nurses in hospitals for the insane we are prone to keep in our minds the picture of the past when considering the present or future. I can remember very well the beginning of the training school for nurses in the general hospital, and I also recollect that every objection which is now being made with regard to the care of insane men by women nurses was made with regard to the care of sane men by women nurses. All these apparently insurmountable difficulties disappeared in practice, and I believe that the history of the woman nurse in the care of the insane man will be the same. We all know that within the last hundred years it was considered to be an absolute necessity to chain a maniacal patient to the wall or floor, and that within a comparatively recent period it was still considered necessary to put him in a bed harness. It is with nursing in our institutions as it is with medical work. I remember being present at a meeting of this association when the superintendent of an institution made the statement that the insane did not require any other medical care than

that concerned with the preservation of their general health. It is the same with regard to the nurse. Many institution officers cannot get the picture of the attendant out of their minds when considering the nurse, and others have been disappointed because they have tried to transplant the general hospital nurse into special hospital work. What we need more than anything else is to improve the material out of which we are expected to make nurses. At present the candidate for the training school in a hospital for the insane is classed with the house-maid, and yet the amount of intelligence, tact, judgment and skill required to care properly for an insane person is infinitely greater than that required in the care of even the surgical patient in a general hospital. There is need of missionary work with the public to teach the importance of intelligent care of the insane, and I believe that this work can best be done by making the hospital work proper the central idea in the conduct of our institutions. I know from personal experience that nurses may be as well trained to do general nursing in a hospital for the insane as in the average general hospital, and, given the same kind of material, we can make a better nurse in a hospital for the insane, because the nature of her work makes her acquire a very much greater degree of self-control, and teaches her to think and act for those who cannot think and act for themselves. It has been my experience in institution work that a man may accomplish almost anything within reason if he determines to do it, and also that he can find abundant excuse for not doing a thing if he does not want to do it. We have solved the problem of giving our nurses special experience that is not ordinarily acquired in institutions for the insane by loaning them, during their senior year, to general practitioners in the neighborhood to attend obstetrical cases, and care for children. The surgical training we are able to give them ourselves.

DR. W. A. WHITE.—One of the things that occurs aside from getting the proper people to apply to the hospitals for positions, is that after the nurse has had her training and got her education she very often leaves the hospital. Her training is often so good she is able to enter into competition with the nurses from general hospitals and make a very successful livelihood outside. It seems to me that one thing that could be done by this association would tend to help that matter, I do not know how much. It seems the proper thing would be to have a committee of the association on training schools, who could prescribe or lay down the minimum requirements for training schools in hospitals for the insane and that the nurses who graduate from each State hospital represented in the association that has met these prescribed requirements, would be received as a nurse in other hospitals of the same character. That might make perhaps a little tendency to shifting at first here and there, but I do not think it would amount to anything and it would tend, in my mind, to keep the class of graduates of State hospital training schools within the service of the insane somewhere within the United States. How much it would help I do not know, but the British Association has done some-

thing along that general line, and their experience seems to have been such that I think it is worth while for us to try it.

DR. C. G. HILL.—These beautiful interesting theories about the employment of female nurses for male patients is to me like picking up a magazine and reading something written half a century ago. Institutions have solved this problem long ago, so long ago that there should be no discussion about it all. There is a little difference of course in the kind of nurses. Our nurses at Mount Hope are Sisters of Charity and prove all these theories that have been here advanced. The female nurses care for all the patients in the place, not only for the convalescent, but the most violent, demented, most insane, those with the greatest depression. It is the extremely violent patients, the demented patients, the uncleanly patients that require the gentle hand of a woman more than the convalescent. They have some feeling and can manage and control and direct themselves, but the extreme patients are the ones that require the hands of woman most. So far as male attendants go, we have none. We have orderlies simply and can afford to be satisfied with an inferior class, though the better nurses are always preferable. Very little is left to these nurses beyond observing directions. The catheter is always introduced by the physicians. The use of the catheter very often grows upon what it feeds and if left to the nurse for the sake of convenience, it will very often convert the nurse into the catheter habit. The physicians must do this themselves. Except in a very few cases you will find few patients to require it; it is very seldom used.

Regarding the administration of an enema, I some time since listened to a paper by Dr. Meyer giving the actual cause of death of several cases as the puncturing of the rectal folds by the syringe in inexperienced hands. I have entirely removed them, even from the male attendants, except in a few instances where we have instructed them, and the function is delegated to special attendants with a view of preventing the bungling administration of an enema.

As a matter of fact we have more violence and more trouble from the female patient than from the male. It is surprising very often how the most violent patients will retain their amiability when a woman is about. It is the power a pure, sweet woman always exercises. If you will consider the matter, you will find that a woman is a natural born nurse, the more gentle and womanly, the better the nurse. Now as the woman becomes a little mannish, as is the tendency of the present day, she spoils her usefulness as a nurse. The best male nurse is effeminate and is good accordingly as he approaches a woman in his characteristics.

It is not difficult to select the right kind of women, place them upon every ward as nurses, and, gentlemen, you will find that the problem will solve itself.

DR. E. H. HOWARD.—Gentlemen, let us not be led astray by the eloquence of Doctor Hill regarding the Sisters of Charity. The facts stated

by him do not help us out of the difficulty we are in, nor show that the statements in these papers are wrong.

DR. C. H. HUGHES.—This is an old subject and one of the most practical in the care of the insane. The most important and difficult matter is the discharge of services which are unpleasant and menial connected with ministering to patients. You can get attendants who will minister wholly to patients and get other people to do the manual work about the institution. One of the frequent complaints is that too much menial service is required of the attendant.

The question comes up here as it did between the King and the physician in Hamlet's time. The answer to that question, unlike that of the King's physician to "throw physic to the dogs," consists in applying our medical remedies, promoting the patient's welfare, and "ministering to the mind diseased." It is the question that comes up in our management of all hospitals, and of the sane as well as the insane. It comes forward in the question of the open door, in the question of the closed door. There are patients who cannot sleep unless they are sure that their door is closed from intrusion from without. Obviously the theory that the removal of doors from all wards is desirable is erroneous. There are other patients that are so timid when the night comes that they ask for protection, mental and physical, to have some one near them to keep others away, and this makes it necessary for something more than one watchman on a ward. You would think that people would not feel very comfortable locked inside a room of a hospital for the insane, and yet there are such patients. It all hinges upon the question of rightly ministering to the mind diseased and answering the question of the King, not by throwing physic to the dogs, but by ministering to them psychically and physically, according to individual real or imaginary needs.

There are certain forms of mental aberration that make it absolutely impossible to put female nurses in contact with that class of patients, so the division of a hospital into wards has grown up, recognizing the necessity of having provision by which you can transfer one patient with special morbid antipathies from one set of attendants and one environment to another.

DR. GEORGE A. ZELLER.—I wish to add my testimony to that of Drs. Bancroft and Hill and to speak of the efficiency of women attendants on male wards in the Illinois Asylum for Incurable Insane, the newest institution in that State, containing 1650 inhabitants. We have 23 wards, all but one of which are absolutely in the hands of women attendants. We do not use the word nurse in the ordinary ward of our institution. We reserve that for the hospital wards. This has been going on with us for more than a year, and it is eminently satisfactory. I would go as far as Dr. Hill in recognizing their work, if I were not afraid that one mishap would throw the whole work back and compel us to replace these women with men. We have been able to take all the bars off the doors and windows, and altogether the woman attendant has been a very pronounced success.

DR. BANCROFT.—I do not know as I have anything more to add. I think that Dr. Tuttle and I are mainly in accord with the situation. The only thing is that Dr. Tuttle approves the employment of women on men's wards, but not in placing them at the head. He, as I understand, would wish to have the woman's influence on the ward, but he would still prefer to have a man at the head of the work. This, as I understand it, is the main point on which Dr. Tuttle and I do not agree.

But I still must say that my own personal experience has led me to believe that women could not do satisfactory work unless they are at the head with a free hand and were responsible directly to the management of the hospital.

I think that institutions like McLean and Butler Hospitals and Bloomingdale Asylum are somewhat different from the State hospitals. These large private institutions have a larger income; they are necessarily run on a little different scale from the large State hospital and the question of expense and finance must come in as a handicap for the superintendent of the State hospital. I have so far found that it was not a practical thing to train the male attendant.

There does not seem to be the inducement to draw in the average attendant into the work. If we have a course of training and he graduates, there is very little demand for the professional services of such a trained nurse. The market, at least in the country, is somewhat overstocked with trained nurses already and the people find that the expense of employing a trained nurse is excessive and burdensome. The good trained woman nurse receives all the way from 18 to 21 dollars a week, and that is for the average country town of New England an excessive price. The ordinary man in New England who is perhaps a good smith or carpenter or mechanic cannot afford to pay three dollars a day for a very long time.

If you train the man attendant to be a professional trained nurse and he graduates as a professional trained nurse he feels he should have at least five dollars a day, and our rural communities in New England would not stand the demand on their pockets of that sum, so when the male nurse goes out from the institution, he does not have the opportunity to secure what he thinks he ought to have. I think this is one great difficulty in training the male attendant in the training school of the hospital.

DR. TUTTLE.—In the main I agree with Dr. Bancroft. I would have no objection to placing women in charge of some wards, but I have another object in view. We must employ some men. If we are to have good men, we must educate them. Now if we take away from these men certain wards and reduce them to orderlies, we by so much limit the career of the male nurse, which now is not too alluring. So for the sake of educating the men, if for no other reason, I would keep a man in charge of the men's wards.

I think there is a place for the graduate male nurse. It is chiefly in

the cities where the people have money to pay for them. I know many men who are getting from 25 to 35 dollars a week and they are satisfactory to physicians and families. Some are in Boston, some in New York, some in Philadelphia, and some in other cities. They are not all good, but there are some splendid male nurses and they are in demand. The question is whether there is enough demand to give these young men an incentive to enter the hospitals for instruction. I think the only chance we have of getting good male nurses is to offer them a career which must be chiefly outside the hospital, for it is necessarily limited within the hospitals themselves.

I have recently requested the trustees of McLean Hospital to increase the pay of male nurses who have charge of wards. I would also like them to be married and have homes, and live in cottages on the hospital grounds, as at the Lanark District Asylum in Scotland, which has built 35 cottages on its grounds so that good men can marry, have a family and make it a life work. The Lanark Asylum has thus solved the problem of retaining the services of good men.

DR. WOODSON.—We have a training school; all of our nurses are expected to attend 30 lectures and recitations a year. Those attending our special course attend 60 lectures and recitations during the course.

The question of keeping help in an institution resolves itself into this: A man will not stay in any position when he can better his condition. The young man who will enter the hospital service with the intention of making it a life work is not worth employing. A man who has no greater ambition than to be a nurse at the ordinary salary that is paid in any institution in America is not worth employing. Men who want to complete their education, literary or medical, gentlemanly fellows with ambitions, make good help. I have helped to graduate 75 physicians in medicine by giving them positions during the vacations of their college or medical course, and they bring to me in the spring of the year, at the time at which I find it most difficult to obtain satisfactory help, a class of deserving men from their associates.

There is no reason why the woman who does work of a man should not receive the man's salary. The man who has passed middle life and has lost his position, or is not able to get a position, makes a good hospital nurse because the prospect of a steady position in a State asylum appeals to him. It is seldom that I employ anyone who has worked in other institutions, but if so, he must have a letter direct from the last superintendent under whom he worked. I make it an invariable rule to help every good man or woman get a better position. By that means they leave us with kindly feelings and that helps to bring us others.

As to the married nurse, I have not had much experience, except this that among most people who are married there is a tendency to go from one State hospital to another, so I always discourage their employment at my institution. I find that if it is necessary to correct the wife the husband is mad and wants to fight some one. If it is necessary to correct

the husband the wife pouts. If one wants to get off and you do not let them both off, they are both pouty. If the family has one sick, the other must go. Our experience has been very decidedly unsatisfactory with the married help.

The reason it is difficult to keep satisfactory male help is that the hours are too long and the salary is too small. The various openings in the avenues of business, commerce and mechanics are many and the demand for men in every walk of life is great. It is difficult to get good domestics and hostlers and farmers. So long as there is such a demand for good men of all kinds, no good man is going to enter the service of an institution and be satisfied to work for the remainder of his life for a small salary, especially when the service is so hard. Under present conditions I can see no promising solution of the problem.

DR. LANE.—In regard to Dr. Bancroft's paper, I think all of us who have had experience with women nurses on men's wards agree that they are successful and it is bound to come. My experience unfortunately has been a limited one. It may be some time before the large public hospitals can add women to the men's wards without additional expense. Any man in hospital work knows that it is very difficult to get adequate male attendants. Here in Boston it is like trying to carry water in a sieve. I believe there is only one solution here in our community, and that is to put the man on a basis of life with other working men. They should have a house and hours with their family. They should not be under the necessity of hospital discipline when off duty. Under present conditions we are unable to relax this after working hours. They should have a right to go back to their families, and until we meet that condition, I think the trouble will always be with us.

I feel that the large insane hospitals have got to realize that they have this immense amount of material for training nurses and I believe that some organized movement should be taken up to have the general hospitals appreciate that the insane hospitals train superior nurses. They have got the material; they can train young men and women in the care of the human body. The ideal plan is for them to start the work in the insane hospital and finish in the general hospital. Here in Boston our directory of nurses states that some physicians very much prefer the graduates of the insane hospital, and they are in demand. They have learned the individual care of cases. They are trained in treating and recognizing the individual character.

THE HISTORY AND USE OF THE TERM DEMENTIA.

By G. ALDER BLUMER, M. D.,

Medical Superintendent, Butler Hospital, Providence, R. I.

The history of the term "dementia" epitomizes that of psychiatry itself. Beginning with its ancient Roman use when in the speculative philosophy of Cicero¹ amentia was its accepted synonym, and when the conception was that of the English "madness," and coming down the centuries to modern times, it is a term that has been applied to a host of varying conditions. Indeed, within the past three years the attempts at precise interpretation of even our youngest, most aspiring, and least fallible, alienists have been hopelessly baffled by the wide, loose, and vague use of this locution. For who is there here that cannot recall instances very many within that brief period when "acute dementia" has been used to connote on the one hand conditions of mental bewilderment and confusion and on the other to characterize terminal and incurable states—states, albeit, differing as the poles asunder in etiology and underlying pathogenesis? In the strenuous endeavor of modern psychiatry sharply to differentiate morbid mental states and therein, perchance, to find the key to prognosis and treatment, this indiscriminate use of the word dementia has been responsible for deplorable confusion alike in the literature and the minds of its students. One might suppose, from the numerous compound words in which it appears, that no matter how indefinite the qualifying term of that compound, the substantive itself had a precise significance of common agreement. Thus, from the descriptive terms involutional, senile, pre-senile, parietic, precocious (with the three varieties, paranoid, hebephrenic, and catatonic dementia), alcoholic, toxic, syphilitic,

¹ Animi affectionem lumine mentis carentem nominaverunt amentiam eandemque dementia. Tusc. 3, 5, 10.

traumatic, organic, post-apoplectic, paralytic, hysteric, acute, chronic, primary, secondary, terminal, and even congenital dementia, one might infer that each of these states exhibited certain well-recognized features common to all, the difference being merely as to age, genesis, etiology, etc. If, however, it should be judged from this free, though apparently positive, use of the word that its psychological definition and analysis could be readily ascertained, grievous disappointment and perplexity would follow an attempt to gain a knowledge of the prominent features of the analysis as expounded by different authors. Take, for instance, the latest edition of so well-known a text-book as Church and Peterson and we find our authors speaking of dementia as a term employed to designate simple mental enfeeblement of all the mental faculties, and again declaring that in medicine it signifies only a general weakening of a mind once normal. Though a sharp distinction is here drawn between a congenital mental weakness and dementia, with this definition as a criterion, the term could be applied to any acute mental disturbance. The more modern conception of dementia as a permanent and incurable defect receives no mention in this work.

"Dementia," observes *Esquirol*, "must not be confounded with imbecility or idiocy. In imbecility neither the understanding nor the sensibility has been sufficiently developed. He who is in a state of dementia has lost these faculties to a very considerable degree. The former can neither look backward nor into the future; the latter has recollections and reminiscences. Imbeciles are remarkable for their conversation and acts which greatly resemble infancy. The conversation and manners of the insensate bear the impress of their former state. There exists, therefore, a form of mental alienation which is very distinct—in which the disorder of the ideas, affections, and determinations is characterized by feebleness and by the abolition, more or less marked, of all the sensitive intellectual and voluntary faculties: this is dementia."²

Griesinger³ says, "In all these cases of dementia the funda-

² Quoted by Bucknill and Tuke, *Psychological Medicine*. First English edition published in 1858.

³ Griesinger. *Mental Pathology and Therapeutics*, 1861.

mental disorder consists in a general weakness of the mental faculties. In the sphere of the emotions this is manifested in the increasing incapacity of the patients for any profound emotion with irregular change of quite superficial emotions or persistent complete indifference. . . . It is this indifference which shows the abnormal state of the emotional reactions toward the external world (laughing and amusing themselves in the midst of the saddest events, etc.). . . . With the complete indifference and absence of all actual desires which characterize the patients we sometimes see manifested disorderly mental movements and aimless, extravagant impulses whose meaning the patient himself cannot understand, and the reaction of the will where this still exists has throughout the character of transitoriness and inconstancy."

Clouston⁴ defines "mental enfeeblement," using the term in a special and scientific sense [*dementia?*], as "A general weakening of the mental power comprising usually a lack of reasoning capacity, a diminution of feeling, a lessened volitional and inhibitory power, a failure of memory, and a want of attention, interest, and curiosity, in a person who had those mental qualities and lost them, or has come to an age to have them and they have not developed."

Henry Maudsley⁵ takes *dementia* to be "the destruction or loss of mind, as distinguished from *amentia*, which is used to denote idiocy or the privation of mind occasioned by causes that have acted before or soon after birth—that is to say, before there has been a change of its development."

For E. C. Spitzka⁶ "Primary mental deterioration is an uncomplicated enfeeblement of the mind occurring independently of the developmental and involutional periods."

Charles Mercier⁷ says, "Clinically, the term '*dementia*' is used to characterize the very large group of cases in which diminution of intelligence constitutes the most conspicuous feature of the malady."

⁴ Clouston, *Clinical Lectures on Mental Diseases*, 1883.

⁵ Henry Maudsley, *The Pathology of Mind*, 1879.

⁶ E. C. Spitzka, *Manual of Insanity*, 1887.

⁷ Charles Mercier, *Text Book of Insanity*, 1902.

For Régis⁸ "dementia is an acquired cerebral infirmity characterized by failure of the intellectual and moral faculties."

A. Campbell Clark⁹ concludes that "dementia means mental wreckage, the result of storms of mental excitement or the ravages of organic disease."

For John B. Chapin¹⁰ "dementia is an enfeeblement of the mental faculties."

Kraepelin,¹¹ although using the terms *die Dementia præcox* and *die Dementia paralytica* in his classification, seems studiously to avoid reference to, or discussion of, the simple term *Dementia*; indeed, the word, surprising as it may seem, cannot be found in the indices of either volume of his latest edition. In his text the word appears rarely and one looks in vain for an analysis or characterization of the condition. It might be thought that a deliberate attempt to avoid confusion had led him to adopt the term *der Altersblödsinn* for the cases frequently nominated "senile dementia" and that *Blödsinn* and *Dementia* were respectively employed to designate mental states of dissimilar character. This supposition is, however, unsupported by the facts, for in the description of *Dementia præcox*, the terminal state is never referred to as *dementia* but as *Verblödung*, *Schwachsinn*, or *Defekt* (excepting, see 7, below). Thus he mentions the following distinct varieties of termination in dementia præcox:

1. Complete recovery (*vollständige Heilung*).
2. Recovery with defect. (*Heilung mit Defekt*.)
3. Simple dementia. (*Einfache Verblödung*.)
4. Weak-mindedness with confusion of speech. (*Schwachsinn mit Sprachverwirrtheit*.)
5. Hallucinatory weak-mindedness. (*Hallucinatorischer Schwachsinn*.)
6. Hallucinatory paranoia. (*Hallucinatorische Verrücktheit*.)
7. Paranoid dementia. (*Dementia paranoides*.) (Clinically distinct from 6.)

⁸ Régis, Practical Manual of Mental Medicine, 1891.

⁹ A. Campbell Clark, Clinical Manual of Mental Disease, 1897.

¹⁰ John B. Chapin, A Compendium of Insanity, 1898.

¹¹ Kraepelin, Psychiatrie, 7th edition, 1903.

8. Profound dementia.

- (a) Desultory forms. (*Faselige Verblödung*.)
- (b) Forms with mannerisms (*manierierte Formen*).
- (c) Excited forms—agitated dementia (*erregte Formen*—*agitierter Blödsinn*).

9. Stuporous dementia. (*Stumpfe Verblödung*—*Apathische Verblödung*.)

The term dementia, according to his conception (though he does not seem to think it necessary precisely to define the word), appears to be a generic one, including all forms of acquired permanent weak-mindedness or defect, and if his "complete recovery" from dementia præcox be accepted as a possible outcome, even *temporary* mental disturbance may fall under this appellation.

It's a far cry from Kraepelin, the scientist, to Tennyson, the poet, but one is reminded in this context that

Words, like Nature, half reveal
And half conceal the soul within.

The author of "In Memoriam," when appealed to by his young countrymen for interpretations, insisted that poetry was not an exact scientific statement. "It is shot like silk," he said, "with many glancing colours. You must not say this means this and that means that, and no more. . . . Every reader must find his own interpretation according to his own ability and according to his sympathy with the poet."

The nearest approach which Kraepelin makes to a concise definition is, when speaking of *the deterioration process*, he says, "Naturally from this there proceeds a progressive destruction of the original personality, which has been usually designated by the name *Verblödung*, according to the form of the mental disturbance which terminates in a somewhat varying manner, and especially in very different periods of time." The enormous elasticity which Kraepelin demands for this term is better appreciated if one reads, on the one hand, his description of senile dementia, and, on the other, that of dementia præcox.

Of senile dementia he says, "Psychic changes of old age in their most intense expression lead to the clinical picture of senile dementia (*Altersblödsinn*). Here the comprehension of external impressions is rendered more difficult and slower. As a result,

the environment is only appreciated in its boldest outlines, while the finer and smaller variations are no longer noted, the coherence of complicated phenomenon no longer understood; patient, therefore, easily loses clear orientation in daily events, loses himself easily, forgets the topic in conversation, fails to note and overlooks the important details, becomes sleepy, lazy in thought, dull, confused as to time, loses easily the thread of thought; disturbances of memory are usually marked, especially as to more recent events, which produce a greater and greater poverty of the store of ideas. The devastation makes itself also apparent in the emotional life; the patient becomes dull and indifferent; his sensibility for sorrow and joy of life and existence becomes extinguished. In the foreground of the interest appears more and more the personal ego and the satisfaction of personal needs and desires. Judgment, so far as it has to do with earlier acquired concepts, is quite good, though in the domain of temporal relations they are prone to exhibit the most fantastic contradictions."

On the other hand, of dementia præcox he says that the whole domain corresponds really to the forms of disease earlier assigned to the *dementia processes*. Kraepelin suggests the change of name [to dementia præcox] because paresis and senile dementia, as well as a series of other disease processes, could be eventually understood as falling under the caption of a dementing process. Here, as opposed to senile dementia, comprehension of external impressions suffers no great injury, orientation is for the most part undisturbed, consciousness, apart from the demented end-condition is in many cases permanently and completely clear; memory is comparatively little disturbed, retentivity very well preserved.

Ziehen¹² defines defect psychoses as "mental disturbance with intelligence defect," feebleness of judgment and memory indicating the intelligence defect. These defect psychoses include congenital and acquired weak-mindedness. The defect psychoses can be characterized as organic; the psychoses without intelligence defect, as functional; that is, macroscopic or microscopic changes shown in the cerebral cortex can be recognized in the former but not in the latter. The circumscribed defects of the

¹² Ziehen, *Psychiatrie*, 2d edition, 1902.

intellectual and reflected emotional tone are to be differentiated from acquired weak-mindedness, in which certain intellectual emotional tones are gradually lost. In the severest grade this loss is to be designated as emotional defect, but here it goes hand in hand with an ideational defect; thus, the dementia hebephrenica (or præcox) of Ziehen "is a defect psychosis which appears at puberty and is identified by a progressive primary intelligence defect *and several characteristic accompanying symptoms* (apathy, stereotypy, etc.). Here we see a point of view exactly the reverse of that taken by Kraepelin, who makes the emotional defect the characteristic feature of dementia præcox.

Wernicke is the only author who seems to have been troubled by the loose manner in which the term dementia is used on all sides, and who alone frankly recognizes the difficulty and directly attacks the problem. He first makes a masterly endeavor to define the term dementia in its general application and then to characterize each of the clinical varieties.

He declares acquired dementia to be, "surely an omission process,—a defect condition"; that one might, therefore, expect to measure the dementia by the loss in mental endowment and conscious content if it were not that normal mental endowment varies greatly from time to time. It might further be postulated that a diminution of mental equipment could be assumed, only when this had been formerly, to a recognizable extent, more significant; thus, a distinction would at the same time be formed between acquired and congenital weak-mindedness. But there are certain qualifying conditions to even such a criterion as this, since normally much is lost from the mental constitution as may be readily proved by examining any older physician or jurist as to the facts acquired while studying for a degree. A loss of positive knowledge could be only regarded as pathological, then, when this was either, but a short time previously acquired, or when in the interval since the acquirement it has been constantly freshened or applied. A loss of the most common memories, corresponding to the status or grade of culture of the individual, would always be a reliable sign of acquired dementia, but even this may not be considered as decisive since there are conditions in which high-grade defects of this sort exist for which the patients, however, have complete insight and, through this, mani-

fest normal judgment. When these patients count upon every defect and at the same time are capable of exerting a tolerable degree of attention, one must hesitate to designate them as demented. Accordingly, especial weight has always been laid upon *judgment ability*, a loss of which has been held to be, though not by Wernicke, the very essence of dementia. Really it must be recognized that this criterion, inasmuch as it involves a quantitative element, is particularly suitable as the measure of the ability of the association organs. But here again a source of error is to be reckoned with. This relates to the judgment which the patients show concerning their delusions, or in general, concerning all elementary psychic symptoms. One can just as well expect that a patient should mistrust the testimony of his own senses and should recognize an hallucination as unreal and pathological because it contrasts with other experiences, as to expect a free judgment concerning a delusion, no matter how senseless the content: such a supposition is contradictory to the nature of mental disturbance.

Wernicke lays little weight upon differences in the type of delusion, such, for example, as is seen between the delusions of the parietic and the paranoid, as giving information as to the presence or absence of dementia. In the last analysis he finds a lack of association common to every delusion and that this lack rests upon the most fundamental process of all mental disease, namely, *sejunction*.

Even in the typical example of paranoia, a primary delusion of grandeur, arising in a primordial delirium, in a later state will remain unexplained for the patient himself so long as the confabulation does not win for itself firmer conditions, but will not on that account be considered any less a fact. There is simply an autopsychic disorientation which, according to the prevailing feeling of well-being, takes on the content of delusion of grandeur. In these cases actual intelligence defect is wanting and Wernicke thinks that Hitzig is wrong in finding even a loss of judgment and an intelligence defect in patients obsessed with fixed ideas; for example, querulants. One could just as well conceive the allo-psychic anguish which always has a content contrasting with actuality, with retained allo-psychic orientation, as a proof of

dementia, though as we know by the outcome of such cases there is no permanent defect.

So, concludes Wernicke, judgment defect in mental disease permits the conclusion that dementia or weak-mindedness is present, only in so far as the defect is related to other matters than the delusion or other elementary psychic symptoms. Having made this reservation, however, he finds mistakes in judgment a valuable clinical sign; for example, when a patient, otherwise without clouded consciousness, fails to recognize as pathological the very disordered behavior of fellow-patients, or when a bookkeeper who can no longer do simple sums correctly nevertheless thinks of returning to his earlier responsible situation. The *behavior*, according to Wernicke, is the best proof of judgment ability. Herein he is in accord with Mercier⁸ who has always insisted that conduct is the main thing that is disordered in insanity. "It is disorder of conduct that gives to insanity its whole significance. Disorder of mind without disorder of conduct, if it were possible, would be unimportant; if it were important, would be unrecognizable; and thus the first essential to a knowledge of insanity is an enumeration of the main features of conduct, and of the ways in which conduct may be disordered."

In many cases the weak-mindedness is seen in decline in the number of concepts with a consequent actual lack of ability to distinguish between certain closely-related ideas, such as between civilization, culture, nation, State, religion, belief, etc. Tact and cleverness, and especially the ability to express oneself happily, are valuable criteria for the establishment of the presence or absence of feeble-mindedness. In very low orders this lack of discriminative ability is shown to a very marked degree. And we have here, therefore, a quantitative estimate of the lack in the content of consciousness. In certain cases a diminution of retentivity forms a part of the dementia, but this is also found in acute cases where there is no dementia. The same may be said of attention. The highest grades of dementia are always characterized in that the attention can be aroused or fixed only with difficulty, if indeed at all.

Having thus endeavored to outline the striking characteristics of dementia in general, Wernicke endeavors to pick out for the different varieties the hall-marks which give varying color accord-

ing to the separate etiology. He finds but few striking, distinguishing features. Relating particularly to *paretic dementia*, he speaks of the character changes and of the psychic incoördination and of the verbal images lost in the reverse order to that of acquirement, so that a more and more simple character obtains, approaching nearer and nearer to the child type. In *post-apoplectic dementia* he finds emotional incontinence of special importance; in the *epileptic terminal states*, irritability and intolerance, tendency toward outbreaks of violence and occasional attacks of rage. In addition he finds an outward display of piety of very frequent occurrence. Retentivity is comparatively little affected, while there is, on the other hand, a loss of comprehension which is found very great and which is particularly visible in the labored verbal expression. In the *alcoholic form of dementia* there is emotional dullness and brutality even where there is little defect in mental endowment. In *hebephrenic dementia* there is an unripe developmental condition corresponding to puberty. There is childishness, silliness, foolishness. Laziness of thought is to a certain extent specific and results in the characteristic non-sense answers or approximate answers (*Vorbeireden, Danebenreden*). Gradually there develops an unmistakable resentment and sullenness against required mental exertion. The patient withdraws from all conversation, demands to be let alone, and finally, if the effort is persisted in by a second person, angry outbursts result. Attention is hard to arouse but retentivity is surprisingly good and considerable fragments of earlier knowledge are often exhibited to the great surprise of the observer. Facial expression remains much more lively than one would expect from the degree of dementia. In senile dementia there is general mental dullness, an egoistic retraction of interest and, above everything else, an almost complete loss of retentivity and a corresponding loss of memory for the immediate past which is combined with confabulation.

And yet, after a close study of the problem as presented by such a master as Wernicke, we are left with a feeling of dissatisfaction as to the final result of the attempt at a solution of the difficulty; a feeling that after all even he, with the best possible good-will and expenditure of his best effort, has laid down that problem not quite answered. It is asking much of our insatiable

demand for narrower delimitations of scientific terms to accept as belonging to one head two conditions of which one is characterized by a loss of comprehension of external impressions, clouding of consciousness, even disorientation, a destruction of retentivity, and loss of memory with but moderate emotional defect; and the other, with no disturbance of these intellectual elements, but, on the contrary, a characteristic deterioration of the affective processes. The conditions would seem to be almost opposite and contradictory in nature, and our willingness to accept this grouping is strengthened by such statements as that of Ziehen to the effect that the defect psychoses can be characterized as organic, and psychoses without intelligence defect as functional. That macroscopic or microscopic changes can be shown in the cerebral cortex in the former but not in the latter, and particularly when we know that no characteristic organic changes have been found in dementia præcox and that closer psychological analysis tempts us to doubt the existence of a genuine intellectual, as opposed to an affective, defect and suggests the possibility that these cases may in the end be found to be more functional than organic.

In conclusion, we may indicate that in psychiatry we have arrived at the place where we must look to our terminology and that we cannot afford to proceed with our studies until we have defined clearly and sharply even the most simple of those psychiatric substantives which are the *sine quâ non* of psychiatric thought.

THE CLINICAL ASPECTS OF PARETIC DEMENTIA WITH SPECIAL REFERENCE TO DIFFERENTIAL DIAGNOSIS.

By IRWIN H. NEFF, M. D.,

Pontiac, Mich.

It is manifestly impossible to attempt more than a reference to facts pertinent to the subject-matter of this paper. Therefore, I shall dwell for the most part with generalities, referring only to the more salient points bearing on the nature, pathogenesis, causation and differential diagnosis of paretic dementia. A reference to the recent and voluminous literature on paretic dementia is convincing that although with reasonable certainty we can say that we have definite and characteristic pathological lesions, we have not solved many questions concerning its nature, course and clinical picture.

An unusual amount of labor has been expended in attempting to establish a pathognomonic clinical sign for this disease; but one must acknowledge that the clinical diagnosis is made on the correlations of symptoms. The advent of the atypical case—the arterio-sclerotic case—and the frequent appearance of analogous symptoms in other cerebral organic diseases having a distinct pathology has made apparently an endless degree of confusion. The idea that paretic dementia is an organic brain disease *per se*, with attendant changes in the mental attributes is an old one, but many of us to-day are again inclined to this belief. This theory is a plausible one when we remember that we have other brain conditions showing similar symptoms,—symptoms so closely resembling those found in paretic dementia that we are often unable to determine the differences.

It has always seemed to me that we have attempted to surround paretic dementia with a veil of mystery, and have patiently and consistently endeavored to make all our cases conform to a certain type. Why should we not have a variation in the mental syn-

drome? Such a variation in symptoms may be found in cases of brain sclerosis, brain tumors, arterio-sclerosis, and even old cases of softening and hemorrhage. If we recognize these inconsistencies occurring in the course of these diseases, why not consider paresis as a disease which can exhibit the same peculiarities.

F. W. Mott, seven years ago, advanced a theory, giving his reasons for supposing that general paralysis of the insane was a primary degeneration of the neuron, with secondary inflammatory changes. His conception of the disease, briefly expressed, was as follows:

General paralysis is primarily a parenchymatous degeneration due to loss of durability of the nerve cells and a premature decay of tissue in which inherited and acquired conditions take part, with the result that progressive death of the last and most highly developed nervous structure ensues as soon as their initial energy is unable to cope with the antagonistic influences of environment.

While the acceptance of such a theory might seem to add to our confusion, I believe that a more general adoption of a theory comprehending Mott's main points might prove serviceable. By conforming to such an opinion many debatable points concerning the disease could be more easily explained.

Some years ago I accepted this theory of paretic dementia as a working basis, and have found that Mott's conception of the disease has proved of considerable aid in the clinical interpretation of the mental and physical syndrome. The acceptance of such a theory might seem to prohibit an accurate diagnosis of the paretic syndrome and prevent a grouping of the disease as a psychosis. However, the classification of mental diseases is to-day an arbitrary one, and we now merely place psychoses in groups if possible, leaving, if necessary, a large number of cases unclassified.

RECAPITULATION.

Paretic dementia is a significant term, and should in the absence of a more suitable name be retained in our nomenclature of the psychoses. It should, however, be remembered that we have in this disease a widespread organic affection, with changes accentuated in the brain, but with demonstrable lesions in the

different systems of the body. It is known that in many cases of paretic dementia vascular and visceral changes may be quite often detected, and for this reason it is claimed by some that paresis is a specific systemic disease and must have an isolated etiological agent. I would, however, suggest as opposed to this a comparison of the more general morbid lesions found in paretic dementia, with pathological lesions detected in other organic brain diseases. Until such a comparison is made and proper deductions induced it seems to me that we are justified in considering paretic dementia as an organic brain disease, with super-imposed mental symptoms. Such an opinion does not destroy the morbid entity of the disease; but allows us more latitude and gives us an opportunity to more thoroughly recognize why we have in this disease a disease of protean form, with a syndrome showing many inconsistencies and contradictions. If we are inclined to such a belief we are more prepared to admit that the differential diagnosis of paretic dementia may clinically be a matter of extreme difficulty.

The frequent occurrence of the anomalous case of paretic dementia, the increasing frequency of the early adult case, and the more thorough individual analysis of our cases of general paralysis of the insane indicate that there must be widespread and varying etiological agents.

It is interesting to note as bearing upon Mott's idea of the disease that heredity is now recognized as an important predisposing agent. We have made an investigation and believe that heredity is a factor of importance, and may be regarded in many cases as a true predisposing cause. We also believe that heredity in these cases is similar to the heredity observed in other organic nervous affections. A consideration separately of the many causes advanced for the production of paretic dementia makes it more apparent that in this disease we have a predisposition, which in a considerable number of cases may be inherited.

We are not yet prepared to say with certainty that we can isolate the condition or factors responsible for the development of general paralysis of the insane. In common with other organic brain diseases it is probable that there are many causes acting directly and indirectly to produce the disease. The apparently clear diagnostic points which are advanced for the purpose of

distinguishing paresis from other diseases are at times of little value, and I think that many of us will admit that we place these doubtful cases either in organic dementias, or more particularly perhaps leave them unclassified.

When differentiating this disease clinically, as is well known, we bear in mind, first, the character and degree of mental involvement; second, the presence or absence of physical signs. To this we must add the knowledge gained from lumbar puncture. The feasibility of lumbar puncture and its practical application in diagnosing the organic insanities, and particularly in distinguishing the organic from the non-organic psychoses, cannot be doubted; but, as with other clinical methods its limitations must be remembered, and our findings considering our present understanding of this procedure must receive careful attention. This diagnostic method, however, has already proven of value and is worthy of more extended use. We have made it a routine measure, and we believe it has assisted us in differentiating the simple insanities from the mental affections having an organic basis. The results we have obtained, however, have been substantiated by other clinical examinations.

It must be acknowledged that we have no one pathognomonic clinical sign and our "positive signs" after all are only suggestions.

Summarizing these brief remarks on the differential diagnosis of paretic dementia, I would say that the inconsistencies manifested in the clinical syndrome of the disease make it imperative that we diagnose by correlation of symptoms. Certain mental and physical signs occurring during the course of the malady may be highly suggestive but are not conclusive. We should always guard against placing undue importance on one symptom. Lumbar puncture in the organic psychosis offers a field for research and may prove to be a valuable diagnostic agent.

GENERAL CONCLUSIONS.

(1) Paretic dementia is an organic brain disease, with superimposed mental symptoms.

(2) The clinical inconsistencies frequently observed in paretic dementia and the presence of analogous symptoms in other or-

ganic brain diseases make it seem improbable that in paretic dementia we have a definite mental entity directly related to the disease. The variability of the mental symptoms thus expressed has its analogy in other brain affections.

(3) In common with our knowledge of other organic brain diseases with attendant mental changes, we may regard the paretic syndrome as capable of being produced by numerous causes.

(4) Heredity of indirect type is probably a not infrequent predisposing element to the disease.

(5) The clinical differentiation of paretic dementia is often impossible. The late appearance of the so-called characteristic mental and physical signs may prohibit a concise diagnosis.

(6) The diagnosis of paretic dementia should only be made by a correlation of the mental and physical signs. There is no one pathognomonic clinical symptom.

(7) The differential diagnosis, clinically, is often a matter of extreme difficulty: the distinction from arterio-sclerosis of the nervous system, brain syphilis, chronic alcoholic insanity, with organic brain changes, cerebral tumors, and brain sclerosis may be impossible. Such a differentiation is particularly difficult in the early or incipient stages of these diseases.

(8) If we consider paretic dementia as an organic brain disease, the mental changes being secondary, we can more easily recognize and appreciate the vagaries of the malady. By comparing the mental symptoms observed to those occurring in other organic brain diseases we are more clearly impressed with the fact that in a case of paretic dementia there can be no well defined clinical picture. Of necessity we must have multiform mental and physical signs.

PSYCHOSES.¹

By J. T. SEARCY, M. D.,

Medical Superintendent, Alabama Insane Hospitals, Tuscaloosa, Ala.

I. NORMAL AND ABNORMAL MENTALITY.

Structures and functions are *normal* when the exhibitions they make are usual, customary, expected, natural. They are *abnormal* when they vary from these characteristics. Structures and functions always correspond to each other; they are correspondingly normal and abnormal. Cerebral structures are normal when the exhibitions they make, of size, shape, construction, weight, appearance, and the like, are what are usual, customary, expected, natural. Their exceedingly complex function, of *mentality*, is normal, when the exhibitions made of it are usual, customary, expected, natural.

Physiology relates to normal structures and functions of the body; *pathology*, to abnormal. *Neurology*, properly, relates to normal structures and functions of the nervous system; *neuriatry* to abnormal. *Psychology* relates to normal structures and functions of the cerebrum, or of its cortex; *psychiatry* to abnormal.

If in our nomenclature we call all abnormal exhibitions, either of structure or of function, diseases, in that sense, mental abnormalities, although they belong only to function, can be called mental diseases.

Diseases are named in medicine, either according to abnormality of structure or of function. We generally begin to name them according to abnormalities of function, because we have not found out the corresponding abnormalities of structure. As we afterwards find out abnormalities of structure, we include them in our technology. The greater part of our technical names, however, still relate to abnormalities of function; particularly is this the case in psychiatry.

We can very readily divide the principal organs of the body into two general departments; the functions of one department

¹ All the roads in ancient Italy are said to have pointed to Rome. In psychiatry it may equally be said that all psychoses tend to dementia. In attempting to present a paper on dementia, I found I could best do it by succinctly covering the whole field. For that reason I offer an apology for not strictly sticking to my text, because what occasions and constitutes other psychoses in the first place leads secondarily to dementia.

relate to activities *within* the man, and those of the other, to activities *outside* of him. The most important organs of the inside department are closely inter-related in the work of the nutrition of the innumerable cells and cellular structures that compose the body. The "necessaries of life," air (or oxygen), water, warmth, and food, which every cell and structure requires, or it cannot live, the principal organs of the internal department are engaged in preparing and distributing. The man "works for a living" in endeavoring to obtain these "necessaries" from outside of him, so that the first and most essential work of the organs, that relate to the outside, is to obtain these "necessaries" from the environment.

In the internal department there are a number of organs engaged in preparing and distributing these "necessaries of life" throughout the body such as the lungs and the digestive tube, for preparation, and the absorbents and vascular system for distribution. There is the skeleton, also, and the connective tissue everywhere, whose functions are mechanical in character; besides these, are the organs of generation, and the organs for the removal of waste, etc., etc.

In the department for external relations, by far the most important organ is the central cerebrum, with its lines of centripetal nerves coming with information from the various sense-organs and from the generally sentient structures of the body, on the one side; on the other side are the centrifugal nerve lines going out to all the "voluntary" muscles of the body.

The organs of both the internal and external departments of the body are under the adjusting, equilibrating control of more or less sentient nerve-centers; all of which have their receiving sides and nerve lines from one direction, and their emitting sides and nerve lines on the other; while the intermediate functions of the centers adjust, control, and equilibrate in their departments. The centers of the internal department have a low grade of sentience with less complicated construction and much inferior adjusting functions. On the other hand the high-brain, with the highest grade of conscious sentience, is the exceedingly complex center that relates to the exceedingly complex department of learning, adjusting, and controlling the outside matters. Every

nerve-center, however, no matter what its grade of sentiency and function, receives from one direction and emits in another, and between the two, for the good of the work it is engaged in, with its grade of living mental ability, adjusts its emitted acts to its received ones. Even the lower grades have that faculty, whatever you call it, and it ascends, in more and more complex efficiency, to the highest mental work of the cerebrum.

The "nerve centers" of these two departments, of internal and external activities, are quite distinct from each other, and so are the organs in each. Although connected and "sympathetic," they are more or less independent. In "the nervous system," the cortex, in its anatomical connections, in its high-grade of conscious sentiency, as well as in the complexity of its mental functions, is largely separate from the centers that adjust with subconscious sentiency, the activities of internal life; still the man is an entirety throughout in his nerve-connections—they make him a connected whole.

Physiologically, the cortex may be said to receive *posteriorly*, to emit *anteriorly*, while to conserve the general welfare of the individual, intermediately it *adjusts* its anterior emissions to its posterior receptions. In more complex psychologic terms it *learns* posteriorly, while it *reasons* and *ideates* intermediately on what it has learned, and executes anteriorly its decisions. It has the faculty of repeating previous acts in recollecting them—probably by following up former structural lines of action.

Men differ in their grades of *ability* and in their *habits* of thought action in each of these departments. Similarity obtains with all men; still, dissimilarity, in the extreme complexity and variability of mental acts, is sufficient to render each person peculiar to himself. Men learn differently, reason and ideate differently, and execute differently. No two are exactly alike in either of the three departments; they differ in these departments when classed as normal, and they differ when classed as abnormal.

Brain functions are more evident to outside observation than those of any other organ of the body. They relate to the outside. With magnified exaggeration the emissions of the anterior executive side of the cerebrum portray the conditions and abilities of the intermediate and posterior tracts. When we are better

informed as to the "localization" of function in the different regions of the brain, we will be more able to designate the structural abnormalities that correspond to the functional ones; we are now almost entirely limited to the character of the anterior executive emissions with which to judge the character of the functions that lie further back.

Not only the man, himself, but his fellows are interested in the structural integrity and the functional capacity of his brain. His own degree of success and his safety depend upon them; and his associates, for their own welfare, are interested in having his mental functions continue normal. The emissions of a man's brain, in all his external volitions, bring him into relationship with others. In the long run these emissions are observed and estimated by others, and, summing them up, he is graded in what is called his *intelligence and character*. As a matter of self-interest and long practice, which has grown into an established habit, or *instinct*, men observe, criticise, and classify each other in these particulars. If the normal exhibitions of a man's mental habits and abilities are matters of constant observation and remark, all the more do the abnormal ones become immediate matters of interest and concern.

We are beginning to use the word *psychoses* to designate any exhibition of mental abnormality of any grade.

A number of terms are in popular and legal use, such as "insanity," "lunacy," "craziness," "non-compos-mentis," "idiocy," "imbecility," and the like, to designate abnormal mental conditions. There is much confusion in the use of them. There are many kinds of exhibitions of mental abnormality and every grade of each kind. The term psychosis broadly includes all grades. The law only takes cognizance of the graver grades. Milder grades appear every where, which do not come within the cognizance of the law, still, as pathologic and psychiatric *symptoms*, are matters of concern and attention, particularly by medical men. All abnormalities are noted promptly in the observations of others; only the graver grades attract legal attention.

The law takes cognizance of graver mental abnormalities and investigates their grades for a number of purposes; for instance, for the purpose of absolving a man from the penalty of the law if

he have committed a crime; or for the purpose of sending another to a hospital for detention, care, and treatment; or for the purpose of disqualifying another from voting, testifying, or marrying; or another, from making a will, a contract, or a *conveyance* of property; or for the appointment of a *guardian* for one, who has property and cannot care for it; or to give *support* to one who is mentally incapable of "making his own living." For such purposes as these and others, the State takes cognizance of the mental disqualification of a man and assumes jurisdiction over his person if it prove sufficiently grave; in this way it reserves to itself the right to apply to persons, who come within disqualifying grades, the terms insane, lunatic, idiot, etc., etc. Society, however, is full of grades not that grave. For these reasons, I would limit the application of such terms to the legal grades.

II. CLASSIFICATION OF PSYCHOSES.

Exhibitions of abnormal types of mentality have been noted and named in the greatest profusion, and there are a great many classifications. We are not yet able to name or class many of them according to abnormalities of structure. I observe in the following table functional classification altogether, as is generally done.

All exhibitions of mental abnormalities are exceedingly complex. We usually give the name to the *most prominent feature*. The term mania, for instance, means that it is, at the time, the most prominent way in which the man's abnormal brain condition is showing itself; it may later change into melancholia, or dementia; or there may be some melancholia or dementia apparent at the same time; still, we call the condition mania because that is the most prominent feature. Such is the extreme complexity and variability of mental activities and abnormalities, our nomenclature necessarily overlaps and there are no clean-cut margins for definitions.

We can, with probably the simplest distinctions, make two general classes of psychoses: *The defective types, and the deficient types.*

A large proportion of psychoses show mental defectiveness as their principal or their leading feature, while others show de-

ficiency. Special defectiveness of brain structure and corresponding defectiveness of function make external exhibitions of mentality appear defectively aberrant from the normal; but general impairment of the whole cortex renders the exhibitions of mentality general deficient in character. It is true general deficiency

PSYCHOSES.

DEFECTIVE TYPES.

Erratic.	Exaggerated.		
NEURASTHENIA, Drink or Drug Habit,	MANIA, Recent, Transitory, Relapsing, Recurrent, Circular, Chronic.	MELANCHOLIA, Recent, Transitory, Relapsing, Recurrent, Circular, Chronic.	PHOBIA, Myso—(dirt.) Thanato—(death.) Astro—(lightning.) Patho—(disease.) Agora—(space.) Claustro—(shut-in.) Etc., etc.
HYSTERIA,			
PARANOIA,			
ABNORMAL IMMORALITY, Weak—Perverse.			
EXCESSIVE, Worry, Credulity, Irascibility, Ecstacy, Pugnacity, Etc., etc.			

DEFICIENT TYPES.

Aments.	Dements.	
Idiocy, Imbecility, Feeble-mindedness.	<i>Primary and Secondary.</i> Dazed, Simple, Dull, Recent, Transitory, Relapsing, Recurrent, Chronic, Terminal, Senile, Precocious.	
		Stuporous, Silly, Confused.

often accompanies defectiveness and defectiveness often accompanies deficiency; still, whether deficiency or defectiveness is the most prominent feature of the psychosis determines the classification.

I have divided psychoses into *defective types* and *deficient types*. I have classed the defective types as *erratic* and *exaggerated*, and have classed the deficient types as *aments* and *dements*.

The *erratic types of psychoses* are those that show their defectiveness in singular and peculiar ways. They generally belong to the individual as an inherent tendency or bias. He *tends* that way, when they are only brought out occasionally, he is biased that way when they are always apparent. Prominent among the erratic psychoses are *neurasthenia*; the drink or drug habit; hysteria; paranoia; abnormal immorality; and such mental states as *excessive worry, credulity, irascibility, eroticism, pugnacity*, etc., etc.

Neurasthenia literally means *nerve-weakness*. Very often, most often, the neurasthenia includes the cerebrum, in its general weakness of the whole nervous system; it, therefore, includes *cerebrasthenia*, or its functional equivalent, *psychasthenia*. Sensitivity being a function of all nerve structures, *over-sensitiveness* or general hyperæsthesia of the nervous system, popularly called "nervousness," is the most prominent condition designated by the term, neurasthenia. *Cerebral hyperæsthesia* is a term more distinctly denoting the actual condition. The neurasthenic is easily pained, fatigued or discomforted; he "feels bad" when he ought not. The whole round of nerve structures is often involved in the weakness, but the general trend of the emissions of the neurasthenic is *complaining* of discomfort of some sort; at the same time he is, on account of his general cerebral hyperæsthesia, fretful, cross, peevish, and irritable. Neurasthenia is a very prevalent malady, including, as it does, cerebrasthenia or psychasthenia. The over-sensitive weakness often precedes some other psychical abnormality, which develops later. Cerebrasthenia, with its symptom of over-sensitive complaint, sometimes reaches a grade requiring legal attention; the person becomes intolerable, or an object of sympathy.

The inherent abnormality, that most often leads the *drink or drug habitue* to the repeated use of these agents, is an inherent neurasthenia—the weakness going further and including his general brain strength or "will-power." He is cerebrasthenic as well, and cerebro-hyperæsthetic. He "feels bad" and such an anodyne as nicotine, opium, cocaine, or such a slowly acting anæsthetic as alcohol, "feels like" a help to him. The drug relieves his discomfort by its chemic, hardening, "benumbing" effect

upon his sensating nerve lines and structures. These agents seem to have special affinity for the *sensory*, prior to the *motor* tracts, and lines. They temporarily benumb his central hyperæsthesia. After the chemic combination of the agent is removed, the structures are left more weakened and more sensitive; the man is less mentally capable and "feels worse," so he resorts to the drug again, and drags a "lengthening chain" of hyperæsthetic neurasthenia and cerebrasthenia. If the man is not a neurasthenic to begin with, the drug begets an artificial neurasthenia and psychasthenia. The whole cortex of the habitue often becomes sufficiently impaired to bring him within the attention of the law, not only because of his cerebral hyperæsthesia, but because some other latent predisposition to mental abnormality has been brought out; he may become seriously maniacal, melancholy, hysterical, or demented, as he is predisposed. It is, generally, "bad practice" to treat a neurasthenic with anodynes or anæsthenics. It is particularly "bad practice" for him to treat himself that way, for the damaged "judgment" of his central, and, the weakened inhibition of his anterior cerebration prevents his stopping, of himself.

Hysteria, we may say, belongs more particularly to the anterior executive tracts. *Inhibition*, the faculty of holding or turning back ideas that present themselves anteriorly for execution, is a very important part of the activities of that side of cerebral mentality. Which ideas to execute and which to inhibit forms a large part of our ratiocination. The preparation of executions, like the propositionizing of sentences, forms a large part of such cerebration. In hysterical conditions the anterior inhibiting faculty is lax; the person too readily "shows his feelings" and thoughts. He is irritable, laughs or cries when he ought not; he is too "emotional." Hysteria often has in it the purpose of attracting the attention of others, and subsides when that attention is withdrawn. In its extreme grades hysteria can be so grave as to require legal attention, particularly if coupled with the abnormality of "bad judgment," or cerebral hyperæsthesia, as is often the case.

Paranoia is more particularly an abnormality of the central tracts of reasoning. The paranoiac reasons peculiarly, eccentric-

ally, erratically. He attracts attention by these characteristics. He may often be described as an *unreasonable* crank. His notions are unreasonable in the opinion of others; and he is unreasonable in the way he cannot be convinced. Being a hereditary bias, paranoia is incurable; it generally grows worse as the person grows older. Paranoiacs are particularly prone to delusions, and are tenacious of them; they are said to have "systematized delusions," because in a systematic way they support them with argument. Paranoiacs abound. The extreme grades are often sent to the insane hospitals where they prove dissatisfied, contentious, irreconcilable, and incurable patients.

Delusions are wrong opinions, ideas, or notions a person has and holds on to, notwithstanding the efforts of others to correct them. They are right in their opinion, they are wrong in the opinion of others. They are the results of defective reasoning abilities; are always signs of abnormality, and deserve attention. They may not be so grave as to bring the person within the cognizance of the law; they are, however, always symptoms of defective reasoning. They are a very frequent exhibition of mental defectiveness.

Illusions and hallucinations are delusions that relate to some one of the senses. In illusions there is some external object affecting the particular sense organ at the time, but the person is deluded as to the character of it. In hallucinations there is no external object; the subjective sense tract alone is defective, and deceived.

Abnormal immorality exhibits itself in two forms; in one, the person is abnormally weak, morally; in the other, he is immorally perverted. In both these types the person is sufficiently intelligent to know what he is doing, and that it is wrong in the opinion of others. Morally weak persons, "moral imbeciles," are inherently unable to hold to the right when opportunity or temptation offers. They are the ready "recidivists." The extreme grades cannot be trained or disciplined into sufficient moral strength. Some courts have recognized the extreme grades of this class as "irresponsible." *Immoral perverts* are the fiends of society. They, here and there, appear, sometimes in the best families. They rape, murder, and burn; they forge, lie, and steal; are pro-

fane, vulgar, and disrespectful; with intelligent pleasure. It is sometimes a difficult question to decide, whether such a person should be sent to the penitentiary or to the insane hospital. "The indeterminate sentence" of the courts is a modern invention, which recognizes these two classes of psychoses, and directs that the criminal shall be kept indefinitely in the penal institution, as long as he shows himself a moral imbecile, or an immoral pervert; on the same principle the patients are detained in an insane hospital. There is a necessity that he should in some way be removed from society.

Such mental states as *worry*, *credulity*, *irascibility*, *eroticism*, *pugnacity*, etc., etc., when within the grade of being natural, usual, customary, expected, are normal; they sometimes, however, reach such excessive grades as to become psychoses; occasionally they reach a grade requiring legal interference.

Other mental abnormalities could be placed among the erratic types. I have shown enough to explain the classification.

The exaggerated types of psychoses show defectiveness in the way they assume stressful, strenuous, excited forms or states, generally with delusions. Such persons are popularly known as the "insane or deranged." Being, generally, more or less a menace to the peace, comfort, welfare or safety of others, or dangerous to themselves or property, they are the first class for whom hospitals are provided; hence the name "insane hospitals." An "insane person" generally means one of this class in the popular mind.

Under *the exaggerated types*, I have placed mania, melancholia, and phobia.

Mania is an exalted or excited mental abnormality, with or without delusions. It can be classed as *recent*, *transitory*, *relapsing*, *recurrent*, *circular*, and *chronic*.

Recent mania, sometimes called acute, has recently begun and does not yet show how it will change or end. *Transitory* ends quickly in recovery. *Relapsing*, subsides, but increases again. *Recurrent* recovers but returns again. In the form of psychosis called "*circular insanity*," because it assumes a round of two or more types, *circular mania* is the excited or maniacal stage or portion of the round. *Chronic* mania lasts a long time.

Melancholia means mental misery. It generally rests upon some depressing delusion. The person has an abnormal sense of his inability to be or to do something and is miserable on account of it. Melancholia, like mania, can be *recent, transitory, relapsing, recurrent, circular, or chronic*.

Phobia is an abnormal fear of something. There are about as many names given to the phobias as there have been different objects of morbid fear; such as *myso-phobia* (dirt); *thanato-phobia* (death); *astro-phobia* (lightning); etc., etc.

The deficient types are those in which there is a lack or loss of mental efficiency in all the departments of thought.

We generally divide such patients into *aments* and *dements*. An *ament* is one in whom the mental deficiency has existed all his life. A *dement* has lost his previous mental efficiency, and is now deficient.

Amentia can be divided into *idiocy, imbecility, and feeble-mindedness*, which are simply different grades of the same condition, and shade off into each other. An *idiot* is one who cannot be taught anything useful. An *imbecile* can be taught to do useful things under the immediate direction of another. A *feeble-minded* person can be taught to do uncomplicated useful things independently. It is idle to promise or to expect like improvement in all of this class by training.

Dementia is a psychosis of general deficiency, which has come on, suddenly or gradually, in the life of the person. There is a general loss of mental ability, the whole cortex is impaired—in its acquiring, its reasoning and its executing departments. There are all grades of it. The *dements* form much the larger part of the population of an insane hospital; all other types tend to pass on into it.

Dementia can exhibit itself as *simple* or *silly, dazed* or *stuporous, dull* or *confused*. *Simple* dementia is a general weakness; *silly* dementia is foolish weakness; *dazed* is generally transitory, and is like what follows a shock or injury; *stuporous* is like the condition in sleep or intoxication; *dull* dementia is a condition in which there is no mental effort; in *confused* dementia there is ineffectual effort at thought.

Dementia is generally divided into *primary* and *secondary*.

Primary dementia begins and continues as dementia; it does not follow or assume any other type of psychosis. *Secondary*, which is by far the most frequent type, follows some other type. The term secondary does not mean that the dementia is the result of a previous psychosis, such as mania, melancholia, or hysteria, so much as that the abnormal cerebral condition has passed into dementia; what was at first partial defectiveness has now become general deficiency; the whole cortex has now become impaired, and a general loss of mentality is its most prominent feature.

Both primary and secondary dementia can be *recent*, *transitory*, *relapsing*, *recurrent*, *chronic*, or *terminal*. *Recent* dementia has lately begun and does not yet show how it will change or end; *transitory* soon ends in recovery; *relapsing* improves and gets worse; *recurrent* gets well and returns; *chronic* lasts a long time; *terminal* is the incurable condition that ends with the man's life. Dementia generally terminates "circular insanity," either just before it becomes normal, or as a permanent sequel. Dementia, that permanently remains, beginning in a few instances as primary, but generally as secondary to other psychoses, is by far the most numerous type of the psychoses.

In old age it is the natural result of the process of senescence for the brain to gradually become demented. The time when this natural condition sets in, or when it reaches the stage called "dotage," varies and differs in different persons. Some at fifty are more demented than others at eighty. It is a naturally expected process, however. Senility augments the dementia which is secondary to other psychoses. The terminal condition is *senile dementia*.

Sometimes, unnaturally and unexpectedly, a dementia sets in in a young person. It is called *dementia præcox*, because it precociously antedates the time when we naturally expect it. *Dementia præcox* may be preceded by some other type, like mania, hysteria, melancholia, neurasthenia, or, sometimes, more frequently in young women, by the rigid condition of a catalepsy, which has hysteria in it, or of a katatonia, which has not. The secondary dementia that remains, in the young person, is the precocious condition. There are, however, some primary cases of dementia in young persons that are peculiar in their unnatural

unexplained unexpectedness, which more particularly deserve the name of dementia præcox.

Dementia præcox may recover; generally it becomes chronic and terminal.

III. CAUSES OF PSYCHOSES.

The most frequent cause of psychoses is *predisposition*; which is an inherent, generally a hereditary, tendency of cortical structures and functions to become abnormal in the particular way in which the psychosis shows itself. In one person the predisposition may lead to hysteria; in another, to mania; in another, to melancholia, etc., etc. Habits of thought belong to the person and constitute his peculiarities, in their abnormal as well as their normal variations. Predispositions to abnormality, under favorable conditions, may remain latent, but afterwards show themselves as the results of anything that impairs the brain. Sometimes they are so ready to develop that the immediate cause of their appearance is hard to explain. The *tendencies* to abnormality, I call predispositions. The peculiar form of the abnormality belongs to the person, and differs in different persons. It often varies in the same person.

Without any predisposition, a local *disease* or a local *injury* of the cortex will exhibit itself in an abnormality of function of that particular part; as the case may be, of a receiving, of an adjusting, or of an executing tract. Sometimes a local lesion impairs the function of other tracts; sometimes it extends to or indirectly impairs all the functions, as in paresis. It may bring out a latent predisposition, in the particular form that belongs to the individual.

General "bad health" of the whole-man weakens brain structures along with all others. Sometimes there is special brain weakness—a *cerebrasthenia* or *psychasthenia*. An asthenic condition of the brain renders the predisposition to any special abnormality more ready to develop into a psychosis.

Whenever succeeding generations are deteriorating in general health, or in brain health, cerebral deficiency or defectiveness is more easy to appear and more ready to continue in those lines-of-descent, like other "stigmata of degeneracy." In degenerating

lines psychoses are more liable to become fixed in the descent. Improved conditions of personal and of lineal health tend to restore abnormalities to the normal; but the incapacity they beget generally increases, and hastens on the line-of-descent to elimination. *Elimination* can be said to be the direct tendency and result of mental lineal degeneracy—psychosis is one of the by-products or accidents on the way to it.

A tendency to abnormality is produced or augmented by certain *toxic agents* in the blood, which have a peculiar chemic affinity for the more delicate structures of the cortex. Such *toxins* are manufactured *within* the body and are introduced from *without*.

Most of the *waste material* of the body, if not promptly eliminated is toxic; inflamed or otherwise diseased structures and organs manufacture toxins; the alimentary tube, abnormal somewhere in its length, is probably the most fruitful source of internal toxins.

Toxins introduced from without, have peculiar chemical affinity for nerve and brain structures; among these are such anodynes and anæsthetics as are in common use for their comforting effects, and which frequently make evident predispositions to abnormality. In this way, the alcoholics, and tobacco, opium, cocaine, and the like, chemically impairing brain structures, directly produce cerebral hyperæsthesia and psychasthenia, while indirectly, they develop latent predispositions into evident psychoses.

The natural process of *senescence* may make a predisposition become a psychosis.

Diseases of the lower nervous system, ascending and impairing the high-brain, may bring out a predisposition; such diseases, for instance, as epilepsy, paresis, ataxia, neuritis, chorea, paralysis agitans, etc.

Disturbing action, coming into the cortex from some abnormally acting organ in the internal department, like a gravid or diseased uterus, a nervous heart, a dyspeptic stomach, a carious tooth, etc., may so disturb a neurasthenic, cerebrasthenic, psychasthenic brain, as to make it exhibit a latent psychosis; or, on the other hand, from the outside, disturbing sounds, tastes, smells, feelings, no light or excessive light, may have a similar impairing effect on a cerebrasthenic.

Over-work of the cortex, like over-work of the muscles, can injure and may bring out a psychosis. This can be done more readily in a neurasthenic, psychasthenic person. The predisposition to some particular form of psychosis is, however, an inherent morbid tendency. Brain strength is the result always of previous individual or ancestral brain exercise, so, as a rule, brain exercise improves brain abilities in the lines in which they are practised; but some brains can stand much more exercise than others before it will become excessive; what would be beneficial to one brain may be excessive to another.

Innutrition of the brain is another cause of psychoses. I have already drawn attention to the absolute necessity that the four things, oxygen, water, warmth and food, shall be continuously supplied to every cell in the body, or it cannot live. These are "the necessities of life." Objective nutrition consists in the proper distribution of these necessities, to all the cells of the body. Subjective nutrition consists in the ability of the cells to appropriate them to their own use. The high-brain is no exception to the rules of nutrition. Failure to properly supply it with these four necessities of life, oxygen, water, warmth, and food, at once impairs its functions and tends to produce abnormal exhibitions, either of defectiveness or of deficiency. Innutrition, therefore, of the cortex is sometimes a factor in causing psychoses to show themselves.

Other causes of psychoses can be mentioned. I have alluded to the most frequent.

In this paper, I have only given head-lines, under which more elaborate articles could be written. Dementia holds the last place and the most abundant place in all classifications of psychoses. The structural changes that correspond to the functional ones will, in much the larger part, still have to be worked out.

In insane hospital statistics I believe the time is coming when there will be three sets of tables. One, showing the types of abnormalities among the patients at some set time; then there will be a table showing the structural changes corresponding to the functional ones; and thirdly, there will be a table showing the causes for these structural and functional abnormalities.

STUDIES IN DEMENTIA, ABSTRACT.

By WILLIAM McDONALD, A. M., M. D.,

Clinical Director, Butler Hospital, Providence, R. I.

The following conclusions are based upon the results of 14 tests performed upon each of 127 individuals, 14 of whom were mentally normal and 113 abnormal; of these latter, the larger portion could be assigned to one of three groups of so-called dementia; namely, *dementia præcox*, *dementia paralytica* and *dementia senilis*. The necessarily limited time allotted for the reading of these papers precludes the mention of any of the experimental data, the gathering of which has extended over a period of many months and even years; not even the results themselves may be given here, but merely a running commentary of the briefest possible sort suggested by the salient points in a summary of the voluminous notes in hand.

Each of the three groups named are here considered separately.

Dementia Præcox.—We are not prepared to quarrel with any one as to the propriety of this term. Quite independently of the questionable clinical use of the name as an appellation signifying the essential identity of the mental disturbance in all patients so classified, it is a convenient designation for that large number of defectives who, though sharply differentiated from senile and paretic demented, have arrived, before the natural period of mental and physical decadence, at a decline to which the name *dementia* has been universally applied. In discussing the character of the mental impairment in these subjects, it should be definitely stated at the outset that we are dealing entirely with the terminal states and not with symptoms complicating the onset or in more or less transitory and accidental attendance upon the course of the morbid process; in other words, hallucination, illusion, delusion, acceleration, retardation, and confusion of ideas, disorders to be found in varying degree in other important mental disturbances, have been largely ignored in the effort to determine the nature and extent of the intrinsic mental defect characterizing the end-condition.

With one or two exceptions which, for brevity's sake, may remain without special note, the tests afforded *no definite proof of primary intellectual defects*, such as were readily found in senile and paretic dementia, whereas, the evidence indicated strongly that the great host of apparent defects in dementia præcox rests upon a basis of diminished emotional activity. The absence of all desire, of interest, of pleasure or pain and of affective reaction, directly influences the degree of effort and of voluntary attention expended. There is a clogging or a blunting of feeling and a consequent absence of spontaneity and vivacity of response with a substitution of laziness, carelessness, and apathy. This diminution of emotional tension was found to be the hall-mark of dementia præcox. This defect alone is sufficient to explain theoretically the various clinical manifestations characterizing these terminal states.

Defective judgment may be interpreted in this light. One gains a peculiar appreciation of the occasional futility of experimental psychological investigation when, after five minutes' free conversation with a patient, it is easier to fix upon a grave degree of mental defect than after an hour occupied with a complicated series of tests in which the patient has exhibited little or no defect. Such experiences occur with greatest frequency with the paranoid subjects.

To mention a specific instance: a patient responds with a fair degree of success to the whole series of tests; the tests completed, however, conversation turns upon his "patent navigating pedometer," an instrument capable, he thinks, of revolutionizing the methods of navigation the world over. On attempting to obtain exact statements and drawings of the instrument, it was found that no allowance had been made for variations in wind, in tide nor in the direction of the boat; he stated that the vibrations of the boat would act exactly like a pedometer in a man's pocket and that the navigator would merely have to gaze upon a dial to ascertain at any moment the exact latitude and longitude of his ship.

Now, such a ridiculous conclusion illustrates the gravity of judgment defect. There is not in these cases, as is so often claimed for paranoia, mere error of judgment, nor, as the Ger-

mans say, a *preservation of formal logic with false conclusions based upon incorrect premises*, though, of course, errors of judgment and belief frequently occur in abnormal and in normal conditions, examples of which are found in every mental disturbance where hallucination and illusion, acceleration, flight or confusion of ideas, emotional excitement or depression mislead judgment. The truth is, however, in these terminal cases that the acute symptoms have largely disappeared. *Logic is at fault, not only in the drawing of conclusions from bad premises, but in the acceptance of the premises.* Logic is superficial; the conclusions are not the result of comparison with data of the subject's past experience, but rather, of acceptance without sufficient examination. There is *premature belief in conceptions which arise only in imagination and are not compared with hard facts and cold experiences.* In many cases the beliefs have arisen in error rather than in defect, but the elements responsible for the error have, in most cases, long since ceased to exert an active influence. In the meantime, however, emotional activity has declined; interest has become dull; the ability to make exertion and to sustain prolonged effort has departed: but these are the very functions which are essential to the reassumption of a normal place in life, the correction of past error, the obliteration of old delusions and the correction of the false view-point toward life. The element of *laissez faire* now complicates the problem. It is easier to cling to the belief in persecution than to reason out the factors responsible for failure. The defect in judgment is thus secondary to lack of desire to arrive at the truth rather than to primary intellectual deficiency.

Disturbances of behavior may be traced in the same way to impaired feeling. The commonest expression of diminished emotional tension is seen in the *inactivity* and in the characteristic *apathetic mien and carriage* of the terminal dement. Frequently, however, when potential energy is at hand and ready to be converted into activity, the lack of desire for the accomplishment of any particular object permits the energy to discharge along the paths of least resistance which are, of course, the paths which impulses have most habitually traveled; the result is *stereotypy* and *mannerism* in conduct; or again, motive being absent, activity

follows the direction of such concepts as are at the moment most prominent in the focus of consciousness and, as these are often derived from the suggestions, requests or command of a second person, the suggestions and commands are carried out without question or objection, giving rise to the phenomena known as *suggestibility* and *command automatism*. At times, however, a choice of direction of activity being demanded and the element of desire, prompted by the representation of an end result, being entirely lacking, energy discharges itself, not along the pathways indicated by suggestion, but in a mechanical way in a direction made still more easy by the habit of avoiding all purposeful activity in which the representation of effort presents itself; namely, in a direction opposite to that suggested; on such occasion *negativism* and *blind resistance* are observed, or even the automatic performance of an act quite the opposite to that suggested or commanded.

These same tendencies applied to *speech* result in (1) *absence of speech* (mere inactivity), (2) *verbigeration* (perseveration, stereotypy), (3) *echolia* (suggestibility), (4) *mutism* (negativism).

Applied to simple muscular processes, (1) *flaccidity* (inactivity), (2) *tics, habit spasms* (perseveration, habit), (3) *flexibilitas cerea, catalepsy* (suggestibility), and (4) *catatonic resistance* (negativism) are the possible resultant phenomena.

Sudden access of energy with necessary explosion, unguided by the rein of purposeful desire, results in the *blind outbursts of violence* which too frequently characterize these end-conditions.

Many shades and degrees are to be noted in the extent of affective defect of these subjects. It was noted again and again that *the paranoid cases* responded to almost every test with the greatest average efficiency of all the so-called defect groups. Corresponding to these comparatively superior reactions, the average intensity of emotional tone was found to be higher than with the average hebephrenic or catatonic subject. Deep apathy was present in no case, though the grade of interest exhibited varied considerably, as did also the prominence of other morbid signs, such as erratic behavior and defective judgment. On the average, the paranoid cases may be said to represent the highest type of dementia præcox as may be sur-

mised from the interest which they retain in their delusions and hallucinations by means of which chiefly they are differentiated from the hebephrenic cases. The separation of the groups is, however, largely theoretical and in individual cases it is often not an easy task to decide to which class the subject can be more properly assigned; frequently the decision must be quite arbitrary and will vary largely with the view-point of the observer. There is no hard and fast line between the groups and even general superiority or inferiority must not be taken as a universal criterion, since there are many paranoid patients with considerable apathy, extravagant and grotesque delusions, and stereotyped silliness of behavior, who would rank much lower on the scale than certain hebephrenics with comparatively little affective blunting, with perhaps no delusions at all and with behavior little or not at all disordered.

The tests on *hebephrenic subjects* resulted in a surprisingly large latitude of variation in the efficacy and facility of response. Almost constantly in the rating of the results of the separate tests, as well as of the tests as a whole, hebephrenic responses are found far toward the top of the list and again at the very bottom. This variation is held to be largely due to differences in degree of interest excited and of effort aroused.

The order of excellency of response to the tests corresponds approximately with the comparative positions to which these patients have been assigned clinically, by members of the hospital staff, appearance of general intellectual defect being the criterion. Wherever a patient was given a much higher position on the clinical list than the results of tests seemed to warrant, it appeared to the writer that the obtrusiveness of mere physical vivacity as opposed to quiescence, often exerted undue influence in the formation of an estimate of the subject's real mental activity. A clearer appreciation of the basis of this supposition may, perhaps, be gained if the emotional expression of a child be compared to that of a well-schooled adult; it thus becomes apparent that feeling has both intensity and depth as well as extent; that unbridled outward expression of emotion does not always afford an adequate measure of its quality nor even of its dimensions. Mere vivacity of emotional expression thus often denotes an ab-

sence of a higher feeling and a lack of real interest in, and regard for, the consequences of conduct. Inhibition is as much an indication of emotional life as is performance, though it is far less accessible to the observer.

A return to the childish mode of reaction to stimuli is, accordingly, often a valuable sign of real deterioration of feeling and many patients of the hebephrenic type reveal the injury in their emotional sphere, not by absolute indifference, but by a lack of interest in matters which require a greater degree of attention and effort. The larger problems of life are neglected: politics, religion, and the social events of the outside world are avoided while the little every-day happenings of the immediate environment receive attention and occupy the whole of the defective activities; the memories of home, of relatives and friends are not lost, as any one may prove, but no longer maintain their normal affective influence; the patient ceases to clamor for discharge and freedom, but remains content with the hospital life, participating with apparent pleasure in the little dances, entertainments and games which in a former state would soon have lost their piquancy. With such a patient, notwithstanding a certain vivacity of mien and volubility of speech, it was found that the results of the tests as a whole were far inferior to those of another hebephrenic who, beyond reading the morning paper, remains inactive and silent for the balance of the day. In certain of the tests requiring a more or less mechanical expenditure of energy, such as the crossing out of the *a*'s in a paragraph, the first mentioned patient derived great amusement and responded with interest and vivacity, accomplishing the best record of the 127 subjects tested, while the second patient seemed to find the test too trivial for the expenditure of much effort and obtained only 45th place in the list. Where, however, the subjects, in order to perform creditably, must not only attend keenly but fix and finally recollect, the relations were reversed; the patient who was first, descended to 79th place, while the other ascended to the 9th. In the total results, the vivacious patient was 82d on the list, the inactive subject 14th. In the clinical estimate the vivacious patient was classed far above the other, whereas, the tests probably gave a more truthful representation of the depth of interest and strength of effort.

Even lower on the scale of emotional defect are certain patients who might be accredited with a very active emotional life if, on superficial observation, one were to accept a more or less constant smiling, giggling, and small talk as an expression of deep feeling. On closer study, however, these phenomena might suggest more the great showing afforded by a large escape of moist steam under low pressure, rather than the small but portentous *hiss* of the dry vapor issuing under great pressure through a minute channel. There is in the hospital a classic example of the type indicated. Though now 58 years of age, this female, with the grace of an elephant and an *avoidupois* at least suggestive of the same animal, has from time out of mind disported with all the animation of a coquettish maid of sixteen, retiring with downcast lids behind her omnipresent fan or parasol and ogling from this safe vantage point any bearer of masculine raiment within the scope of vision. Her own constantly hilarious apparel would, however, demonstrate unequivocally the destruction of all remnant of finer æsthetic sensibilities as would also her preference for tawdry ornaments of glass and brass. Her discordant torturing of the ward piano announces daily in no uncertain tones the participation of aural sense of harmony with the visual in the general obliteration of fine affectibility; her absolute selfishness, disregard for the comfort of others, and silly conduct proclaim the absence of altruism and of social and moral sensibility. In this patient with all her exhibition of superficial emotional activity, we find the grade of affective destruction but once removed from that in which visceral and sexual demands are about the only stimuli capable of stinging the anæsthetic personality into activity, if, indeed, one may use here the term personality which has been so often defined as the sum total of emotional states.

But in the very lowest of the low of these terminal states now under consideration, the patient observer will unearth the intellectual elements of all varieties of learning, such as Greek and Latin words, and will note over and over the preservation of the functions of memory, discrimination, recognition, etc., as has been steadfastly maintained in the preceding remarks. Occasionally the downward course is well illustrated in the changes in the taste for literature. In the first stages, silly romances dis-

place more worthy books; then there is desultory reading of scraps, advertisements, etc.; picture books later occupy the attention and finally the subject remains idle, not taking the trouble to look at pictures even, and yet, in this last stage it is quite possible to prove that the ability to read with understanding is preserved as we have had occasion to demonstrate by presenting mute catatonics with written orders.

There, is, perhaps, but little doubt that *catatonic subjects* represent the lowest extreme of emotional defect. In no other group has been noted, not only such inferior response to the tests, but such uniform *absence of any response whatsoever*. Here the observer finds himself confronted with a mask of inactivity and indifference beneath which he may only occasionally catch a glimpse of the underlying conscious processes, the real nature and extent of which he is left largely to surmise. In such darkness the temptation is to surmise too much, and it seems probable that this temptation has led the psychiatrist into the error of excessive generalization.

Among the patients ordinarily classed as catatonics, it seems to the writer that at least two, and perhaps even three, quite distinct varieties of mental disturbance are to be distinguished. That this error has occurred is not surprising since, in the general absence of characteristic expression of psychic activities, the common element of morbid psychomotor phenomena is the most noticeable feature. The presence or absence of *three factors*, however, has led to a differentiation of certain patients from the others, though it must be confessed that the separation is not always easy and that a long period of doubt must frequently precede the decision.

In the first place we may distinguish the classic catatonic terminal dementers who are to be found chiefly among the year-long residents of every hospital for the insane. With these patients the catatonia is nothing more than the expression of apathy, inattention and indifference; *true stupor* is, however, as a rule, absent, *primary retardation* is wanting and the *outcome* is, so far as our experience teaches, absolutely hopeless, the condition remaining practically constant till death supervenes. These are the genuine catatonic dementia præcox patients and are to be distin-

guished from the paranoid and hebephrenic cases merely by a deeper grade of emotional destruction.

Catatonic stupor is to be distinguished from this latter state. It is merely a particular variety of stupor and is found with great frequency in most of the ordinary types of mental disturbance as well as in certain preliminary stages of general anæsthesia (particularly during etherization) and in alcoholic intoxication. There is much about the condition to suggest a toxic origin and its frequent occurrence in the acute confusional psychoses of the exhaustion and toxic type is, therefore, not surprising. It appears not infrequently in dementia præcox and is here to be regarded as a complication or accident rather than as an essential feature of the disease. When a period of catatonic stupor arises in the course of terminal catatonic dementia there is danger of a failure to recognize the special nature of the condition just as periods of manic excitement, which are frequently seen in dementia præcox, are incorrectly interpreted as manifestations of the defect psychosis rather than functional disturbance of the melancholia-mania type.

Catatonic stupor is seen in its typical form in the more severe attacks of melancholia-mania where it is called *manic stupor*, an unfortunate change of name which has led most psychiatrists, including the writer, into the error of regarding it here as a form of stupor essentially different from the catatonic variety.

Reference to this manic, *alias* catatonic, stupor leads us to the consideration of the second group of patients to which the name *catatonia* has been applied.

Whenever a patient in the earlier years of life becomes afflicted for the first time with an attack of mental disturbance, and after a short period of excitement or depression passes into a state of catatonic stupor of many months or years' duration, the chances are very great that sooner or later the psychosis will be set down as dementia præcox. An instructive illustration of this tendency may be found among the records of Butler Hospital. A woman of 36, after two years of agitated depression, entered the hospital in 1892 and almost immediately passed into a state of catatonic stupor which remained unbroken for nine years. The records teem with such statements as "*dementia complete*";

"*patient has for years maintained the apathetic silence and inactivity of terminal dementia*"; "*hopelessly demented—nothing of importance to record.*" To-day, this patient, living at home is leading an active social life and has for more than two years been an incessant worker among the poor and unfortunate, showering philanthropy and charity on all sides and revealing, as we have all recently agreed, not the slightest trace of dementia or acquired defect. Her sudden emergency from stupor and a subsequent period of manic activity and elation have left little doubt as to the proper diagnosis.

Did time and space permit, examples of similar conditions and similar mistakes in diagnosis and prognosis could be multiplied many times. We strongly suspect that the 13 per cent of recoveries in Kræpelin's catatonic group were, for the most part, in patients for whom the diagnosis of melancholia-mania would have been more appropriate, and the reason for the confusion is not difficult to detect if the first and second volumes of Kræpelin's last edition are carefully studied and compared; it is thus readily seen that, in his eagerness to detect and to describe clinical details, a characteristic for which he is deservedly renowned, he has neglected to formulate for himself a sharp conception of the condition to which he refers as *stupor*, and has thus been led into the error of employing the term with an ambiguous and unstable significance. In Vol. I, pp. 270 and 271, he defines *stupor* as *impeded liberation of volitional impulses* (*Erschwerte Auslösung der Willensantriebe*), and selects *catatonia* as the most important variety, concerning which he says in Vol. II, p. 214, that the laughter with which patients respond to jokes indicates that comprehension of impressions is disturbed less than emission of voluntary acts. This retention of comprehension and of unclouded (or but slightly clouded—p. 225, Vol. II) consciousness, he emphasizes throughout the description of the catatonic form of dementia præcox. The psychic impediment of *manic stupor*, he says, however, can proceed to a *frank stupor* (*ausgeprägte Stupor*—p. 533, Vol. II) in which the patients are deeply insensible and unable to comprehend or to elaborate the impressions of their environment. The latter conception of stupor with its involvement of consciousness and comprehension is, of course, the only

possible correct one, the preceding definition being merely that of a paresis of psychomotor volition. The diminished liberation of volitional impulses is the simple, uncomplicated catatonia, the characteristic of terminal states of dementia præcox: add to this a retardation of intellectual elements or a clouding of consciousness and the *classic manic retardation* or *manic stupor* are respectively produced. It must not be forgotten, however, that the problem of diagnosis is further complicated by the occasional occurrence of one or both of these latter conditions in temporary attendance upon dementia præcox.

In addition to these two varieties of psychosis quite distinct in significance and outcome but frequently classed as catatonic expressions of dementia præcox, there is still a possible third group not so sharply demarcated and which after all is, perhaps, merely the representation of the very lowest form of emotional defect and thus to be distinguished from the higher types simply by the severity of the disturbance. There are, however, in these patients certain physical signs highly suggestive of gross disease of the anatomical constituents of the brain; such are the blunted, lifeless, mask-like appearance of the features, the thick and incoordinate character of the speech, the tremors, the dilated and frequently extremely sluggish pupils, the clumsy gait, stooped shoulders, twitching of facial muscles and weak and flabby condition of the body in general. Moreover, M. Rosenfeld¹ has found, both unilateral and bilateral astereognosis in catatonics not dependent on sluggish attention or mental defect. There is something suggestive of paresis in the condition though without the fatal outcome or probable syphilitic origin. It is, apparently, these cases which have given rise to the numerous reports of post-mortem findings of severe changes in the cerebral cortex in cases of dementia præcox.

Senile Dementia.—To indicate concisely the distinction between the dementia of the senile cases and the so-called precocious dementia, it may be said that all tests emphasize the primary defect of all intellectual faculties in the former cases, with comparatively well preserved affective function, as opposed to preserva-

¹ M. Rosenfeld: Ueber Partialdefekte bei Endzuständen der Katatonie. Centrablatt für Nervenheilkunde in Psychiatrie, Dezember, 1905.

tion of intellectual function with loss of affectibility in dementia præcox. Except in states of impaired consciousness and stupor—which are of frequent occurrence in senility,—the conservation of feeling is so well-known that all stage pictures or literary descriptions of senility may be divided into two classes; in the one the tenderness and sweetness of old age with its tears and smiles and its nursing of old loves and of family ties throws a bright halo of sentiment about the fading form; in the other, sourness and heightened irascibility announce only too forcibly the retention of emotional activity beyond the days of good judgment and mental vigor. It is scarcely necessary then to revert in detail to the tests for proof of what is already known. In a word, they show that sensation, impressionability, retentivity, recollection (both for recent and remote events), recognition, discrimination, speed, facility and extent of association (both forward and backward—both abstractive and synthetic) are all subnormal, with a proportional deterioration in intellectual efficiency and general productivity, whereas the affective functions retain their virility. As opposed to dementia præcox, the desire and ability to attend are remarkably well preserved though efficiency of effort is inferior. Fatigue and confusion arise early and further disable endeavor.

The above mentioned defects are primary in character: in addition, clinical experience teaches that judgment and behavior are frequently at fault in senile dementia and that delusions, illusions, and hallucinations, as well as exhibitions of manic excitement and of depression, are of frequent occurrence. The erratic judgment and conduct are largely, if not entirely, secondary to the defect in the number and control of intellectual concepts or to the last mentioned morbid disturbances (hallucination, illusion, confusion, etc.). Corresponding with the preservation of the affective functions in senile dementia, the personality of the subject maintains its identity to the last in contradistinction to dementia præcox where it becomes altered and finally almost lost.

Paretic Dementia.—To avoid the repetition of unnecessary detail in summarizing the results of tests with subjects of dementia paralytica, it may be said that any, or all, of the defects noted in either senile dementia or dementia præcox, or in both, may be

present according to the intensity, extent and location of the disease, but that in general the morbid process does not exert a selective influence upon the affective function as in the latter psychosis. The depth of genuine dementia occasionally attained in paresis is probably greater than that of any other condition, for we have observed cases in which for months and even years the patient has existed with scarcely a trace of conscious mental life, but in which the obliteration of mental processes was not due to a clouding of consciousness, but vice versa, the dying out of awareness, resulting from lack of intellectual fuel, or of percepts upon which to focus. Living automatons thus remain which reflexly swallow, absorb nutrition, and excrete waste products like the decerebrated animals of experimental research, finding a depth to which no other human beings ever reach except possibly in a few brief hours of ante-mortem stupor. Never have we seen such a grade of mental deterioration in dementia præcox or even in senile dementia, outside of a primary stupor.

PROGNOSIS OF TREATMENT OF DEMENTIA.

By CHARLES K. CLARKE, M. D.,

Medical Superintendent Asylum for Insane, Toronto, Ontario.

To me has been assigned a task that might easily be classed as Herculean. One cannot speak dogmatically about something which has not, as yet, been clearly defined, and when it is remembered that America has, in many instances, seen fit to outdo Europe, in the discovery of dementia præcox; the difficulty of my position is made plain: In discussing the questions of prognosis and treatment of dementia I have taken it for granted that the term is to be used in a limited sense, with particular reference to the classical forms of dementia præcox, described by Kraepelin, rather than to the allied states, about which so much is being said and written.

When it is remembered that Kraepelin places the percentage of dementia præcox at fourteen to fifteen per cent of the admissions and the enthusiasm over classification in America can more than double this figure, some reason for my caution can be advanced.

Then again when the subject of prognosis is touched upon, the question: What is a recovery? at once crops up, and when we compare facts with statistics, we are confronted by the suspicion that the word "recovery" conveys a very different meaning to alienists of varying mental types. I have in mind many so-called recoveries from the classical forms of dementia præcox, some of them classified as such by myself in my younger days, when enthusiasm possibly made the wish the father of the thought, which I should not include in the list of recoveries to-day.

Modern methods of clinical investigation have not as yet been long enough in use to enable us to speak definitely of the prognosis, and when it is remembered that very few alienists agree regarding the classification, surely I may be excused if in talking of the prognosis I am content to accept to a certain extent the ancient dictum which tends to the belief that dementia is a condition dependent on permanent structural changes, which preclude the hope of recovery.

Possibly to make such an absolute statement is going further than we are justified by actual facts, because certain cases, which seem fairly to come under the heading of dementia præcox recover, and yet the proportion is very small, indeed so small that they may almost be regarded as the exceptions which prove the rule.

When one considers that dementia præcox generally takes years in its development, in fact has often reached what might be called the terminal stage when the alienist sees it; the reasons for a grave prognosis are at once apparent.

It has so happened that I have been able to study several cases of dementia præcox, from childhood up, and have seen how inevitable was their evolution, when their ancestry was known and understood. Truly, as one writer has claimed their mental defect was pre-ordained, and their history is only that of the majority of those who suffer from this disease. To the close observer the evidence of pathological change was present, early in the day, and if treatment of any kind was to have been applied, with hope of success, it should have been commenced in childhood, when efforts to effect a healthy development might have been successful—I say might have been, because I am by no means convinced that such a favorable result would have followed. To assert categorically that dementia præcox is incurable, is, of course, going too far, and such a statement cannot be justified, but it is not beyond the strict truth to say, that many of the so-called recoveries might fairly be classed as cases of remission, or possibly put under the heading “improved.” Certain it is that the majority of the so-called recoveries are not regarded as normal, even by the ordinary observer and the evidences of pathological change are plainly apparent. That the term remission should be applied to many of these conditions is sooner or later revealed; in fact so many of these people are abnormal from a very early age that it is difficult to know what should be called the normal standard to judge them by. Possibly the striking improvement that occasionally takes place in apparently hopelessly demented catatonics, improvement so marked that they are able to accept a limited amount of responsibility in daily life once more, leads to errors in classification of recoveries. We all like to see our recovery list as large as possible but the demands of science require an accurate statement of facts. Then again

friends who assume the care of such patients, when on probation, make optimistic reports, regarding their mental health.

Dr. Clarence B. Farrar, in a recent contribution to the *JOURNAL OF INSANITY*, has summed up the situation fairly and cleverly and his attitude towards the subject must be commended.

It would be unwise then, at this stage of our investigation of dementia præcox to attempt to even approximate the percentage of recoveries, from what is evidently one of the most incurable of all mental diseases.

Of the three varieties the Paranoic forms are the most serious, and those in which the hereditary predisposition is marked are peculiarly unfavorable in prognosis. The catatonics frequently improve in the most striking manner and occasionally the hebephrenics follow a similar course, but as has before been said it is generally still possible to demonstrate in these persons evidences of mental defect.

The tyro in psychiatry will ever be disappointed at the numerous failures in cases which at some period of their course assume an apparently favorable aspect. Kraepelin states that eight per cent of the hebephrenic and thirteen per cent of the catatonic patients recover sufficiently to resume their ordinary occupations.

Little can be said about treatment unless it may be suggested that a careful study of school children should regularly be made by those who are familiar with the disease and understand the gravity of the situation. Surely if ever the advisability of early treatment of any disease were indicated, it is in dementia præcox. Consultation with intelligent teachers would generally bring to surface those weaklings whose future is threatened by the development of dementia; treatment might then be possible, and in many instances psychotherapeutics and other methods of value suggested.

It is not going beyond the truth to say that most of our public school systems are the very worst possible for the care and proper development of the dementia præcox classes. It would be better for the State, the weaklings, and all concerned, if these children could be recognized early and intelligent effort made to steer them clear of the dreadful fate which ordinarily stares them in the face.

Possibly in spite of any measures taken, a large proportion of the cases would run on to the terminal stages, but certainly the effort to avert this result should be made, persistently.

Now, what is to be said about the treatment of dementia præcox, as we ordinarily see it?

My experience has been, as has been before suggested, that complete recovery may rarely be looked for, but under common sense methods, marked improvement is frequently attained and many patients reach such a mental condition that they are, in a limited way, able to resume their former occupations. They are, of course, poorly equipped to enter into the keen competition of some walks of life, but where properly protected, have a certain sphere of usefulness.

The best results are to be developed by a careful and judicious system of rest treatment, massage, hydrotherapeutics and special nursing; indeed the personality of the nurse counts for almost more than anything else, especially with the catatonics.

DISCUSSION.

DR. CORIAT.—I would like to ask the readers of the papers a few questions in order to illustrate some facts. I would ask Dr. Blumer if he classed under the caption of dementia forms of mental annihilation alone or whether he would not include under this title also the moral and ethical deterioration such as frequently obtains in chronic alcoholics.

I would like to ask Dr. McDonald to explain more clearly what he means by his tests; to give a short summary of the methods that he used, psychological and psychophysical, in the study of dementia, and have his results at all compared with the experimental results obtained by Masselon in the study of dementia præcox. Also, if he used the association tests to any extent in dementia præcox, such as Bleuler has done, and if so, did he notice any peculiar sticking to one association or any peculiar reactions pointing to Ganser's symptom.

I certainly cannot agree with Dr. McDonald in his claim of the identity of manic depressive and dementia præcox stupor, for in my experience the so-called manic depressive stupor differs from that of dementia præcox stupor in that in the manic depressive, the inability and refusal to speak and the lack of all motor activity is due more to inhibiting influences. Whereas in dementia præcox it is due to a spirit of contrariness, the so-called negativism.

It also appears to me that the recent studies that have come forth from Clark University on the psychology of puberty with its immense amount of data, would be of great value if these were applied to the early histories of cases of dementia præcox and if these cases should be taken and worked along a certain scheme, not claiming to establish any fixed scheme, because this would be contrary to any spirit of progress in psychiatry, but a scheme of the psychological tendencies of adolescence

and puberty that could be applied to the early history of dementia præcox and prior to their further development in the hospital.

I would further like to ask Dr. McDonald if he noticed in any of his cases in which he used the association tests at all the lengthening of the association time when the association referred to certain sensoral emotions.

DR. HUGHES.—We are still living under the differentiations made by the older writers. Dementia has come down to us as a morbid condition of the brain characterized symptomatically with loss of mind power and control, as distinguished from amentia of congenital absence of mind. It is the absence of psychic power—loss of mind. It is a functional condition and may also be organic, but many regard it as always an organic state of the brain. That is not correct; the definition is properly a functional one.

Dr. Searcy mentioned the fact that neurasthenia, cerebral psychasthenia, might be one cause of dementia as we see it manifested. I wish to say that I do not regard dementia præcox as entitled to be considered as a psychopathic entity. It is a condition of functional dementia, oftentimes as a consequence of neurasthenia involving the cerebro-psychic centers.

I have in my hand the proceedings in brief of the neurological and psychiatric section of the Fifteenth International Congress recently held in Portugal, containing the opinion, in harmony with my own, which I wish to record, of Prof. Maestio Preri Madui, who, discussing forms of pathogenic precocious dementia, says that dementia præcox is not entitled to be considered as a nosological species, in which I cordially concur.

The overlooking the fact that dementia is often functional and may be the product of neurasthenic trouble or psychopathic exhaustion involving the psychic centers of the cerebrum, is liable to lead to grave error. We ought to take into consideration the fact that dementia is not disease, but a symptom grouping, although it is the expression of apparent total loss of mind as we often see it in its terminal forms and the aged. The senile form of dementia is often subject to the same influences and brought about by the same causes that develop in patients dementia præcox and extreme exhaustion of the brain. Since having left an institution and being engaged in private practice, I have seen cases of dementia præcox and primary dementia which recovered, including the amnesia and all other displays of mental exhaustion.

DR. MILLER.—I was particularly impressed with Dr. McDonald's paper on "Experimental Studies in Dementia." I think he has brought out some very suggestive points on the differentiation of the form of dementia in the different psychoses. In spite of what we have heard on the unity of insanity many of us still believe that we are dealing with a number of entities, and Dr. McDonald's work has shown us methods whereby we can arrive at conclusions and differentiate experimentally. That to my mind is exceedingly important. I look forward with pleasure to the reading of his complete paper.

DR. BLUMER.—I have very little to say, but with reference to Dr. Coriat's questions perhaps I may be permitted to tell a story that was told me last winter by President Wilson, of Princeton University, as having a bearing upon the questions which he put to myself and to Dr. McDonald after the papers were read.

President Wilson told me that he was lecturing last winter in a small town in Pennsylvania on Aristotle and he announced, somewhat rashly, at the opening of his lecture, that he was prepared to be questioned at its close. He had no sooner sat down than a tall and severe lady arose from her seat, and looking at him through her steel spectacles, asked solemnly: "Mr. President, do you think the world has made as much progress as it might?" President Wilson was put out of action, as I was at the Hotel Vendome, and said, sparring for wind: "I beg your pardon, madam." She then rose and repeated the question in the same severe words, whereupon President Wilson said: "You are evidently laboring under a misapprehension, madam. This is a lecture *on* Aristotle, not *by* Aristotle."

Now, in this particular instance, my paper having been written in conjunction with Dr. McDonald, and not being quite sure what that gentleman's attitude towards the interrogator and the interrogation is, I am very willing to have him cover the whole subject when he rises to answer the questions, many more of them, that were addressed more especially to him. (Laughter.)

DR. SEARCY.—Mr. President: I have very little to say more than to state that I believe the time is approaching when in making hospital statistics three sets of tables will be required. The first, a table classifying patients as to their types of insanity at the time of their admission, or at stated times. Another table stating the cause of their types of insanity, and then, possibly a third table in which the structural abnormalities which correspond with the functional abnormalities will be given. I think the time is coming when we will have these three sets of tables, bringing out these points.

DR. McDONALD.—I am sorry that time is so limited as to prohibit a full answer to all of Dr. Coriat's questions. I will endeavor to answer to the best of my ability in the brief time permitted.

As to the tests which formed the basis of the conclusions drawn, I have to repeat that which was said in the introductory paragraph of the paper; namely, that a description of the methods employed would consume a large amount of time and can be more advantageously explained in the published article, which I hope will appear shortly. I may merely add that their object was to obtain some sort of numerical estimate of the visual and auditory impressionability, retentivity, and power of recollection, of discrimination and recognition, of the speed and facility and spontaneity of the associational processes—both in the usual direction and in a direction the reverse of the habitual, and of the synthetic and analytic types—of attention, of judgment, and of the facility of motor reactions. The

numerical values of the results of all tests for each patient were added together and by averaging these an attempt made to form an estimate of the comparative average mental capacity in each of the clinical types of dementia.

The tests used were such as the counting of metronome beats, crossing out of letters in a printed paragraph, sorting of cards, reciting letters, numbers, and words seen and heard, as well as objects seen, both a shorter and a longer interval being allowed to intervene between the registering of the impression and the attempt at recollection, naming forwards and backwards the months of the year, series of numbers, etc.

The methods of Freud and of Masselon formed no part of the tests, since they are irrelevant to the object of the experiments.

As for Ganser's symptoms, it was of course found frequently in the course of the observations with subjects of precocious dementia but, as has been shown by *Dr. Ruggles*, who, in his search for it examined every patient in Butler Hospital, the symptom is illusive and, even when present in its most typical form, disappears under close questioning by a different investigator, in a different spirit or in another environment. Our patients, without exception, on being questioned later, answered either correctly or in such a way as to show that the former peculiar answer was not based upon associational disorders but upon carelessness, apathy, negativism, or upon a tendency to give wilfully a nonsensical answer to a nonsensical question. Thus, such patients often responded, "You knew before you asked," or "I answered foolishly because you asked it just to see if I am insane," etc. And so in these present experiments, the symptoms though occasionally interfering with the tests, disappeared surprisingly often when the patients were encouraged by being shown that their responses were being considered seriously.

As to the differentiation between *manic stupor* and the *stupor of catatonia*, I doubt if I shall be able to answer to Dr. Coriat's satisfaction, since an unfortunate use of terms has brought about a confusion very difficult to dispel. I began several years ago to be greatly puzzled in the endeavor to differentiate between these states supposed to be so distinct in character. Only of late have I found any way out of the difficulty.

I do not wish to be understood as stating that there is no difference between *catatonia* and *manic stupors* these conditions can be quite sharply differentiated. The perplexity arises from the double meaning which Kraepelin gives to the term *stupor*, which in itself he defines as *an impeded discharge of volitional impulses*. This accords also with his description of catatonic stupor in which he says there is, as a rule, no characteristic clouding of consciousness nor disturbance of comprehension. When he comes, however, to manic stupor he says that there is often a profound disturbance of *comprehension* and of *consciousness*. This state he characterizes as an out and out *stupor*. That there is a wide difference between these two conditions, no one can deny. Indeed, the difference is so great that both cannot, or ought not, to be characterized as *stupor*.

The first mentioned state is *no stupor at all*, for I cannot conceive of a stupor in which there is no disturbance of consciousness nor of comprehension; the manic state referred to is, however, a genuine stupor. The former condition should be called merely a catatonia, since psychomotor disturbance and not stupor is the characteristic feature. So far, I imagine, there is nothing particularly radical in my statements. Clinical experience leads me, however, to go a step farther. There is a genuine stupor which is found frequently as an accidental occurrence in dementia præcox. This state I fail to differentiate from the stupor of manic-depressive insanity, excepting as the distinction is made clear by other essential characteristics of the two psychoses. If it be called a catatonic stupor we are using the term in a paradoxical sense since the condition is much more often found in genuine melancholia-mania than in the catatonic form of dementia præcox. Moreover, in mania-melancholia, when *stupor* supervenes, negativism, resistance, catalepsy, echolalia and suggestibility, as well as perseveration (verbigeration, automatism, etc..) are found with great frequency and their appearance does not warrant an alteration of diagnosis to that of dementia præcox as I have often been called upon to admit to my mortification after having prognosed a rapid dementia.

DR. A. MEYER.—I should like to say just a few words, partly of appreciation and partly expressing the desire that we might have heard all of the papers. It is a very difficult thing to discuss a paper of which you have heard two-thirds and of which you expect that the other third said the thing that would make superfluous the question which one would like to raise.

The whole issue, is, of course, an immensely difficult one, and I think rather illustrative of the general difficulty that we have in psychiatry. It is very significant that Kraepelin in his large volume does not give one a chance to be misled by the consideration of what dementia is. If we want to discuss a type of that sort, we had probably best take individual cases in which the mental deterioration comes in, and then ask ourselves: What are the methods by which to determine the circumstances which brought about the deterioration and its actual extent? After having studied these facts, we will proceed to a consideration, or possibly explanation, of the formation of deterioration: what is at the bottom of deterioration, and to what extent can it be influenced?

I think we are getting more and more away from a tendency to define these over-large things. In psychiatry we must get accustomed to recognizing types rather than huge entities, because the latter do not lead us into the most productive fields.

I should, therefore, say that at the present time in the discussions of dementias, differentiative points are of more importance than consideration of what dementia in itself might be, and in that respect great advances have of late been made in our histological differentiation of the type in general paresis, arteriosclerosis, in simple senility, in various toxic dis-

orders, and then in the various psychogenic disorders. In the corresponding clinical data, too, we need correspondingly closer observation of differentiative points. As to broad sweeps of definition we have, I think, no reason to imitate the old-fashioned theologians who started out to give definitions of God.

There has been a great amount of interesting material in the papers, but partly because I feel that the issues may have been covered in the subsequent portions, and partly because, unfortunately, we did not allow the readers to give us the completed symposium, I had possibly best limit myself to a few remarks with regard to the management of deterioration.

I should like very much to draw your attention to some observations that have lately been published by Bleuler. He says that up to a few years ago his hospital at Zürich was filled to overflowing and there was continual strife between physicians outside and the hospital authorities on account of the impossibility to take in patients. His studies in dementia præcox have brought him to say that the mainspring in the management of the disorder is the management of the interests of the patient, and that if you want to further the interests of the patient, you have to try to put him as rapidly as possible in an environment where interests are naturally fostered. So he has come to the conclusion to shorten the asylum treatment of dementia præcox and send them into an environment where the interests and instincts are kept alive so that the patients begin to assimilate normal influences again, and he had remarkable results. Where before he had been against discharge of dementia præcox he has perhaps gone to the other extreme, that is, dismissing the patient as soon as possible so that he might get his normal instinct stimulated.

This throws a very interesting light on the nature of the disorder. While part of our remedial work may follow the autotoxin theory, Bleuler's results show that interest culture is of paramount importance.

HYSTERICAL INSANITY. REPORT OF A CASE PRESENTING GANSER'S SYMPTOM-COMPLEX.

By HENRY P. FROST, M. D.,

First Assistant Physician, Buffalo State Hospital, Buffalo, N. Y.

Among the clearly-defined disease pictures, now fairly numerous and constantly being added to, which to-day replace for the student of psychiatry the confused descriptions of our earlier experience, none is more interesting than the peculiar mental state described by Ganser in 1897 and since discussed by several observers under the name of Ganser's Symptom-Complex. This is, as stated by Ruggles¹ in his recent paper in the AMERICAN JOURNAL OF INSANITY, "a condition of hallucinatory confusion beginning acutely, developing rapidly, and quickly diminishing; it is accompanied by hysterical manifestations and is followed by amnesia for the attack; it is especially characterized by the symptom designated *Danebenreden*, or the symptom of approximate answers—which is the Ganser's symptom, properly speaking."

Ruggles has done good service in compiling the bibliography of the subject and presenting us with the several views held regarding the significance of the "symptom" as distinguished from the "symptom-complex," adding to our knowledge by citing several cases observed by himself in which the symptom was discovered without being shown to have any special significance.

I wish to supplement this very interesting contribution by reporting a case showing the typical symptom-complex as described by Ganser and more recently by Schultze,² and emphasizing the value of a knowledge of this condition, especially in dealing with supposed malingerers of the criminal class.

¹ Ruggles' Observations on Ganser's Symptom, American Journal of Insanity, October, 1905 (with bibliography).

² Schultze, Deutsche Med. Woch., Nov. 9, 1905, p. 1818.

SUMMARY.

A youth of 18 with good family history, the youngest of three children. In childhood obstinate and selfwilled, but not untruthful, nervous, or excitable. All his life healthy and active, quick to learn, enterprising and ambitious; no bad habits. At 17 he refused to attend college and study medicine, had a serious disagreement with father, left home April, 1905, and supported himself by installing electric call-bells, etc., hiring one or two assistants. In June he got into trouble through overdrawing his bank account, and again shortly after, having on the second occasion paid an insistent creditor with a check, intending to get some money and make a deposit before this could be presented. In August he sustained a severe blow on the head followed by unconsciousness and headache. Following this, repeated foolish thefts and forgeries, leading to arrests under assumed names, and finally to commitment as insane, in October. He eloped to New York, ran up a hotel bill, was again arrested. Then followed a new and more ambitious business venture in his home city, with fresh money difficulties; repetition of thefts; another arrest and commitment to jail. Sudden onset of psychosis marked by confusion, foolish answers, queer ideas based on his business as agent for an arc light said to contain radium, physical prostration, analgesia. After two weeks sudden recovery with amnesia for attack. After recovering, an account of "queer spells" of subconscious activity, explaining his criminal acts.

The patient was admitted from the jail February 5, 1906, late at night, as an emergency case. On admission he was in a dazed condition, very languid and weak, unable to stand alone, hands and feet cyanotic and cold, pulse feeble. He did not answer questions but said, "Are you going to give me more radium? Are you going to hang me up"? He was put to bed and stimulated.

Physical examination next morning showed a tall, slender, delicate-looking boy, in poor physical condition, exhausted or in a state of collapse. No developmental asymmetries or defects were noted but the skull was large, slightly hydrocephalic; palate high and narrow; features small—a "weak" face. The eyes had a dull expression, the lids drooping.

The pupils were dilated and reacted sluggishly to light.

Cutaneous sensibility.—There was *analgesia of the entire skin surface*, a pin-prick being felt only as a touch or tickling, with fairly good localization.

Corneal, conjunctival, and pharyngeal reflexes present.

Vasomotor conditions.—Face flushed; hands and feet cold and blue; sweating of legs and feet;—dermatographia increased.

Deep and superficial *reflexes* active.

Muscular system.—General impairment of strength—scarcely perceptible hand grasp, equal on the two sides. Face immobile. No muscular rigidity or resistance. Fine tremor of hands. Gait weak and unsteady.

Heart weak, rhythm irregular, pulse 60. Blood-pressure low (120 R. R.).

Lungs normal but respiration shallow, rapid, and irregular.

Urine negative.

Mental condition.—Patient answers questions after some hesitation, speaking in a low, monotonous, whining tone. His utterances are jerky and gasping. He looks sleepily at examiner with eyes half open, and talks without any play of facial expression. In spite of his dull look and slow speech he seems eager to tell his recent and present experiences and continually volunteers additional information or repeats his previous statements.

He says that his head is hot—is all fire inside—is filled with yellow flame; they made him eat radium like salt—they put radium in his arm with a machine—they hung him up by the heels to give light—they soldered the wire to his finger—he is to be hung up in the armory to-night to give light. He asks examiner to get him a new fuse, as they blew out the fuse and his legs won't work—they've got them connected wrong—the arc is upside down. He asks, "Has that fellow got the suit-case for me yet"? The suit-case is on a street-car down town and his sister is in it and wishes to see him. He gives a confused account of his recent acts. He says he took four suit-cases from men on Main Street who had radium, and that he had to hide them so that people would not find out the secret of the lamp. When questioned he admits that he sold the suit-cases but cannot remember where nor at what price.

He remembers coming here last night "in a wagon with a top

to it with three men"—one of them put radium in his arm (hypodermic administered by his father, a physician). He came from the place where they took him and gave him radium—was taken there on Wednesday (correct) and kept there two days (five). He knows that he is in a hospital but does not know the day or the month. Asks, "Is it January? I remember signing a contract in January."

He gives absurd answers to many questions, as follows: Your age? "18" (correct). Birthday? "I don't remember, I think it was just a little while ago." Your father's name? "Dr. Gordon." Where does he live? "On the East Side, on some avenue. I don't know the avenue." What is his full name? "I don't know—I can't remember." How do you spell your name? "I don't know—can't remember." What is your first name? "Excello." Your second name? "Arc Light Co." (for which he was selling agent).

How do you spell Gordon? "I don't know—can't remember." He is given a pencil and asked to write it. He holds the pencil loosely and awkwardly, makes a few meaningless marks, and then says his hand "don't work." What is the first letter of the name Gordon? "I don't know—can't remember."

His left leg now trembles violently for a few minutes, and he explains that "the fuse has blown out."

Question. Is your mother living? "I think she lives on N. Avenue. I don't know the number" (naming the street on which he had lived recently with friends). Have you any brothers and sisters? "One sister" (he has also two brothers). What is her name? "Mary" (referring to his sweetheart as we learned afterward).

Where did you attend school? "I went to the lamp school where they have radium."

The patient, when visited by his father, recognized him only as one of the men who gave him radium, and next day said that he had not seen his father in a long time and could not describe him. He continued to give absurdly wrong answers to questions; could not count from 1 to 20; said, "I can't—it don't want to come." What comes after 2? "20." What after 3? "13." After 13 what? "30." Shown 2 fingers, he says "it is a hand." How many fingers? "A lot of them." How many? "About

13, I guess." He cannot multiply 2×4 . Says, "I can't remember—such a long time ago—I learned only about radium and arc lights at school."

Being urged to name the months he finally says, "Monday." He does not attempt to name the days; says "they get all mixed up." He cannot name any of the principal stores or hotels of the city, and when the names are suggested by examiner he says he never heard of them. He gives a wrong location for the railroad station.

He calls a watch "a round thing"—its use? "to look pretty, I guess." A knife and a pencil are called "sticks"; a button is a "butter." Colors are miscalled or not named at all. A newspaper is a "contract all mixed up." Letters and figures are miscalled, and letters are called figures, etc.

The patient was removed after two days from the observation dormitory to a single room and the attendants were instructed not to question him as above nor encourage him to talk further about radium and arc lights. He was ordered a brief cold shower bath daily, followed by friction, and was given strychnine sulphate, gr. $\frac{1}{30}$ t. i. d. He quickly gained strength, ate, and slept normally; sat up in bed and looked at the pictures in magazines, still proclaiming himself unable to read; wanted to dress and return to the big room "to see the men and watch the cars go by." He continued in the same mental condition, but brighter and more active, until the twelfth night after admission, when he awoke from a sound sleep at 2 a. m., came out of his room and asked the night nurse where he was and how he came to be there in a strange place which seemed to be a hospital. He said that he had gone to sleep about nine o'clock the evening before in his cell at the jail and that, upon awaking a few minutes before, he noticed that the window was different; and when he looked about the room he could not find his clothes which he had laid on a stool, out of reach of the rats. When told that he had been in his present surroundings nearly two weeks he was incredulous, and asked for a newspaper to show the date, which he remembered was February 3d when he had gone to sleep. He showed a little excitement and was eager to discuss the matter at length but was induced to return to bed. He did not sleep again, however.

When I saw him the next morning he did not recognize me—said he had never seen me before. He was sitting up in bed, reading. His expression was lively, he smiled freely and talked with much more animation and freedom than before. He was entirely clear concerning all of his past, with the exception of the fortnight just elapsed, which was a blank to him, not pierced by even the slightest dreamlike remembrance. He had no recollection of having entertained the ideas about radium, etc.

He gave a clear and connected account of himself, prefacing it with the remark, delivered with an embarrassed, apologetic air, that what he had to tell was so strange he feared no one would believe it, and for that reason he had not previously given to any one the real explanation of his many erratic acts during the past seven months. He then told of a fall from his motor cycle in August, 1905, in which he struck on his head and was knocked unconscious for half an hour. He had a terrific headache for two days and kept to his bed. After this he had queer spells, difficult to describe, in which he seemed only semiconscious or as if in a dream, with no conception of time and with no control over his actions, though he knew to a certain extent what he was doing. He thinks that he must have looked and acted naturally though, as no one noticed anything wrong with him. In these spells he went under assumed names, forged checks, and committed thefts of which he had no knowledge until he found the articles in his possession afterward. Twice during August he found in his basement in the morning bicycles which he had appropriated the day before. He was gradually and with difficulty able to remember where he had gotten them and on these two occasions he returned the wheels to the stands from which he had obtained them. One of them he had taken from in front of the City Hall, probably leaving his own there in exchange. Not finding his wheel when he returned the other, he had made inquiries for it in the building and then reported his loss at the police station, giving his correct name and address (this I was able to verify from the station-house blotter). The remainder of this account includes statements from the anamnesis. The third time he took a wheel he carried it at once to a pawn shop and was there arrested, giving an assumed name. His father obtained his discharge without sentence. A week later he was

again arrested, this time for attempting to cash a forged check. He was now examined by two physicians and committed to a private hospital for the insane, his father not believing him actually insane but not knowing what to do with him except to take this advice. After two weeks, during which he made himself useful about the place, he ran away—in one of his spells, he says. He came to himself perched on a trolley pole, engaged in stripping the insulation from the wire with the purpose of electrocuting himself. He then stole a ride to New York, where he lodged at a first-class hotel and lived well for several days until he was arrested for his board-bill. He spent some time in the Tombs but was finally released through the intervention of friends, after which he obtained, on the strength of his good appearance and businesslike manner, the agency for a patent arc light and returned to Buffalo to prosecute this business. He borrowed some money on his expectations, rented an office, engaged assistants, and went actively to work; but had little success, so that in a few weeks he was in financial straits. Then followed the theft of suit-cases from street-cars, four or five in all, on January 29, 30, and 31, resulting in his arrest on the last-mentioned date, his transfer to the jail on February 2, and his lapse, on the following day, into the peculiar state in which he was committed to the hospital and came under our observation.

Following his sudden emergence from this condition, which has been described, he underwent rapid convalescence, showing, however, much instability and childishness for some time. He had several attacks of depression in which he moped and cried, would scarcely speak, complained that he was "down and out," that his friends had all deserted him. Then he would quickly recover his spirits and show a keen interest in the life of the ward, working industriously, playing games, etc. He was inclined to tease for small privileges and often cried like a baby when refused. These symptoms disappeared with the return of physical vigor, and the patient was discharged on June 1, apparently recovered, but after reaching home he cried, said he felt downhearted and nervous and was not willing to stay there. At his own request he was returned to the hospital where he again seems very well, and speaks confidently of his ability to get along outside at the next trial. The analgesia disappeared at the time

of his awakening and since then no physical signs of hysteria have been present. The visual fields for form and color were found normal after his recovery—they were not tested earlier.³

I am aware that the circumstances in this case, and the symptoms as well, are such as to give rise to a strong suspicion of malingering; and this possibility has been kept in mind throughout. I believe, however, that the facts as stated, justify the diagnosis of hysteria, the result of trauma, acting upon a highly sensitive, unstable, and immature organism already taxed by precocious family and business cares. The assumption is that the acute psychosis which I have described was induced by the mental strain and excitement consequent upon his arrest and imprisonment, and this may be regarded as merely an episode in the course of the essential disorder.

³ The patient went home in September last. When seen a month later he was quite well and is so reported now—December, 1906.

CLINICAL AND PATHOLOGICAL REPORT OF A CASE OF ADDISON'S DISEASE WITH TERMINAL MENTAL SYMPTOMS.

By HARRY W. MILLER, M. B. (Tor.),

*Pathologist and Assistant Physician, Taunton Insane Hospital, Taunton,
Mass.*

The following case of Addison's Disease with a psychosis which appears to have more than a casual relationship to the somatic disorder is not without interest from a clinical and pathological standpoint in view of the infrequency with which such combinations are observed:

Summary of clinical history.—Female; forty-seven years of age on admission to Taunton Insane Hospital June 30, 1902. No psychopathic taint in the family. Three sisters died of pulmonary tuberculosis. Cotton weaver by occupation; no school education. Is said to have always been robust and vigorous; normal weight 150 to 160 pounds. Twice married, but had no children and no miscarriages. No venereal disorders. A moderate beer drinker.

In the spring of 1900 she began to complain of weakness, exhaustion, and shortness of breath on exertion. "I feel as if I had been working for a year and had no rest. . . . I am so tired and worn-out all the time." Two months later patches of yellow appeared on her face and neck, which were spoken of at the time as "yellow jaundice." The discoloration next appeared on back of the hands, forearms, and the chest. In the fall of 1900 this pigmentation was noticeable, according to the husband, over the greater part of the body. While at first yellowish it later took on a brownish hue, and reached its maximum intensity one year before admission and after that paled somewhat. She was compelled to give up her mill work and engage in a lighter occupation in the summer of 1900. She lost weight, feeling of exhaustion

increased, and she had frequent dizzy spells and attacks of palpitation of the heart. Her appetite became poor, but there is no history of nausea or vomiting. Throughout 1901 she was only able to take care of her own room as she was unable to withstand the exertion of outside work.

In December, 1901, she became forgetful and discouraged. Her worries were confined chiefly to her physical condition. Beyond this despondency and the forgetfulness no mental symptoms were noted until early in May, 1902, eight weeks before admission, when she told her husband that mice were crawling over her. Paræsthetic sensations were frequently discovered after this. Animals, she said, were crawling upon her. At one time she screamed, saying a dog had bitten her on the arm. Again a search-light was being played upon her back from the neighbor's house. She reacted to this by complaining to the police demanding an investigation, thinking the neighbors were attempting to kill her by means of the search-light.

She did not consult a physician until two weeks before admission. The physicians at the dispensary told her husband that she always talked in a rambling way and was mentally irresponsible, and advised her commitment to the hospital.

Physical summary.—A poorly-nourished, exhausted-looking woman; forty-seven years of age; weight 91 pounds; height 5 feet 2½ inches. There is a diffuse darkish brown pigmentation over the body, being especially prominent around the nipples, in the axillæ, over the abdomen, on the back of the hands and the extensor surface of the forearms. The color in this latter location is similar to a deep tan, and there is a rather sharp line of demarcation marking off the upper half of the arm where the discoloration is slight (resembles the arm of one who has had their sleeves rolled up, and had the exposed part deeply tanned). The palms of the hands and soles of the feet are not discolored, nor is there any discoloration of the nails of the fingers or toes. On the face, legs, and back the color is less intense than elsewhere. There is a small, irregular patch just above the right breast where the skin is unusually white and somewhat atrophic-looking (leukoderma?). Conjunctivæ pale and clear. Respiration 18; pulse 76, weak and thready; increased on slight exertion. Heart sounds weak but with no murmurs. Heart dulness within

normal limits. Bowels constipated; urine shows nothing of significance. There is a decided feeling of exhaustion. Facial muscles and lips tremulous. Right pupil a little larger than the left but both react to light and accommodation and consensually. Speech is a little slow and labored with a suggestion at times of slurring. No significant disturbance of the reflexes. No areas of anesthesia or paresthesia can be discovered, but the mental state prevents an accurate examination of sensation.

Summary of mental condition.—Her facial expression is one of indifference and apathy rather than one of depression or anxiety. She is always very quiet and her manner clearly indicates that she prefers not to be interfered with. She is content to remain in bed, does not ask for any attention, and accepts what is done for her without comment. She shows very little animation. While showing some annoyance at intrusions she never gives expression to her irritability in words, nor does she ever display any emotional outbreaks. She never introduces conversation. Her reaction to questions is variable; at times she responds, again the stimulus produces no reaction, and she has to be aroused by a sharp tone before a response can be elicited, and then it is accompanied by a sense of effort. This reaction becomes intensified the longer the examination is continued. Her education is so limited that the usual fatigue tests are impossible, but in many ways the diminution of the capacity for mental application is demonstrated. Her attention is sometimes easily attracted, but in this regard she varies. She is rather more alert at the beginning of the examination, but later she shows a greater sense of effort in responding. Her attention is never distracted by outside occurrences, and the answers she gives are always relevant. She is always able to orient herself for place; sometimes gives the correct day and date, and again says that she cannot think what day it is. She has never been able to give the names of the different physicians or of the nurses though she had been frequently told, and it is impossible for her to describe any of the physicians who at the time of the interview are absent. It is difficult for her to give correctly the events of her life. She has made several contradictory statements regarding them at different interviews, but if sufficiently stimulated she is able to give the correct responses. An accurate analysis of her recent

memory is likewise rendered difficult, but there is an evident inability to hold in her memory all recent events, and at no interview could she give correctly events in sequence. She is unable to read. Her school knowledge is practically nil, and her general intelligence of a low order so that a just estimate of her intelligence can hardly be given. She has never related any delirious experiences. No sensory hallucinations have been detected here. She does not recall those described in the history, in fact she denies that she ever had any such sensations.

She remained in bed until July 11, but shortly after being allowed to sit up she had a chill and was accordingly returned to bed. Her temperature, which up to this time had remained between 98° and 99° F., following the chill rose to 100° F., but the next day returned to normal.

July 18 she vomited for the first time though previously was nauseated at times. Her appetite was poor. Bowels constipated, an enema being required every second day. At no time was there any diarrhea. Body temperature did not again become elevated; extremities always cold; asthenia profound throughout. Death occurred July 21 in an attack of syncope.

Autopsy report.—The autopsy was performed seventeen hours after death. Female body, apparently about forty-five years of age; 158 cm. long. Much emaciation; eyes sunken; rigor mortis present; pupils equally dilated; no cedema. The pigmentation is present in the locations noted in the physical examination. No areas of bronzing discoverable on the tongue, mucous membranes of the mouth or vagina.

Thorax.—The left lung presents old adhesions at apex and over lateral surface. No effusion. Right lung free.

Heart.—Pericardial sac free from fluid; no adhesions; no inflammatory changes. Weight, 163 gms.; very small; slight amount of yellowish fat on the surface; right ventricle with a trivial amount of dark clot. Valves normal except aortic, one segment of which shows a pin-head-sized fenestration. Aortic intima smooth without evidence of sclerotic change. Right ventricle, 2 to 4 mm.; left ventricle, 6 to 10 mm.; aortic valves, 7.5 cm.; mitral valves, 8.5 cm.; tricuspid valves, 9 cm.; pulmonary valves, 6.8 cm. Endocardium and myocardium show nothing in the gross.

Lungs.—Right, 382 gms.; left, 425 gms. Both lungs show scattered throughout small, hard encapsulated nodules, some with caseous centers, others completely fibrous. The majority of these are about the size of a pea, a few the size of a small bean. A moderate degree of congestion and cedema at the bases of both lungs. No acute inflammatory changes.

Blood-vessels without significant lesions.

No indication of thymus.

Liver.—Weight, 1049 gms. Surface smooth and even. Section shows only a moderately congested appearance. Gall-bladder of normal size, showing nothing notable.

Spleen.—Weight, 142 gms. Nothing of note.

Pancreas.—No abnormalities.

Kidneys.—Right, weight, 155 gms.; left, weight, 170 gms. Capsule rather adhesive, tearing cortex on removal. Surface a deep red. On section dark red cortex which is not thinned nor granular. Pyramids paler than cortex. Relationship cortex to medulla, 1 to 3.5.

Urogenital system.—Bladder and urinary tracts normal. Uterus and ovaries moderately atrophied.

Gastrointestinal tract.—Enlargement of the intestinal lymph follicles. No changes in stomach.

Suprarenals.—Each gland weighed 145 gms. Both increased in size and adherent to adjacent organs. Surface nodular and misshapen; no normal parenchyma found. The glands are made up of dense, fibrous tissue enclosing areas of sticky semifluid, cheesy material, smears of which reveal the presence of tubercle bacilli.

Semilunar ganglia present no notable gross changes.

Head.—Brain, weight 1100 gms. Meninges very pale; vessels of pia empty; no evidence of inflammatory reaction. Cortex pale but everywhere normal in width. Section shows no gross anomalies.

Spinal cord shows no macroscopical changes.

Anatomical diagnosis.—Chronic fibrocaceous tuberculosis of suprarenal glands. Healed tuberculosis of lungs. Chronic pleuritis, adhesive. Moderate hypostasis. Bronzing of the skin. Cardiac hypoplasia. Small fenestration in aortic valve segment. Congestion of kidneys with beginning interstitial changes.

Atrophy of ovaries and uterus. Hyperplasia of intestinal lymph follicles. Cerebral anemia.

MICROSCOPICAL EXAMINATION.—*Adrenals*.—At the line of junction of the adrenal and the kidney a rich small-celled infiltration is found but no reaction within the kidney substance. The enlarged adrenals reveal only fibrous tissue surrounding areas of caseous degeneration. Nowhere was there any normal adrenal tissue.

Semilunar ganglia.—In neither semilunar ganglion is there any striking change. There is a brownish-yellow pigment in the cells which is not greater in amount than that found in the ganglia of patients of the same age. There are chronic inflammatory changes in the tissues surrounding the ganglia, but neither the fibrous increase nor the tubercular disease is discovered within the ganglia.

Spinal cord.—No degenerations with the Weigert-Pal or Marchi stains. The anterior horn cells show with the Nissl and eosin-methylene blue stain a pigment of a yellowish-brown color. All the cells are not equally pigmented. The extent of the pigmentation is not greater than the amount seen in senile conditions.

Cortex.—There is a very decided increase in the amount of pigment in the largest pyramidal cells. Some of the cells almost completely taken up with pigment. The pigmentation seen to a less degree in the smaller pyramidal cells. All extremes are seen, from the cell with a minute quantity to the balloon-shaped pigment sacs. Aside from the pigmentary changes the reaction in the cortex is confined to the nerve cells. The meninges are normal. No significant vascular changes. No neuroglia proliferation. The most usual cell change is a granular disintegration of the chromophile bodies, an enlargement of the nucleus, deeply-stained nucleolus, the non-stainable substance taking a pale stain. While in the majority of the cells the nucleus is round, in others it is irregular, and then the nuclear contents are deeply stained.

Pigmented skin.—The pigment is in the lower cells of the rete Malpighii, confined chiefly to the lowest layer but also found in the second lowest layer and rarely above. There are no prickle cells seen bearing pigment. Occasionally below the Malpighian layer there is a small patch of pigment but not within a cell. The

pigment is confined almost exclusively to the cells. No pigmented connective-tissue cells.

The other microscopic changes may be briefly summarized as follows: Simple hyperplasia of the abdominal lymph glands; healed tubercular processes and passive hyperæmia in the lungs; slight muscular fiber atrophy with interstitial increase in the heart; healed foci of tuberculosis in the spleen; beginning interstitial changes in the kidneys.

Kiernan,¹ in a paper on "Intertraction of Somatic and Psychic Disorder," writes: "Addison's Disease, when it complicates insanity, exerts a depressing influence on the patient's mental state." . . . "It has not yet been demonstrated that Addison's Disease does more than complicate insanity. An etiological relationship is not yet established. Personally I am inclined to believe that Addison's Disease is secondary to the insanity it complicates in the great majority of cases."

Griesinger² says that patients affected with it are profoundly depressed. The melancholic form with conditions of anxiety and emotion have been observed by Drs. Rutherford and McPhail.

Binswanger³ mentions condition of stupor, agitated confusion, and secondary dementia in connection with Addison's Disease, but states that the psychic disturbance is not clear.

The literature makes frequent mention of the existence of symptoms of coma, delirium, and convulsions, but reports of cases of prolonged mental disturbance in an otherwise uncomplicated Addison's Disease are exceptional.

Kellogg⁴ refers to a well-marked case of insanity with Addison's Disease, about which he says: "It is not improbable that there is some casual connection between the two affections."

There are various theories to explain the asthenia associated with Addison's Disease. Abelous and Langlois⁵ found that the extract of the muscles of an animal dying as a result of removal of the suprarenals possessed a toxicity similar to that of the muscles of an animal tetanized to exhaustion. They inferred that

¹ Alienist & Neurologist, Vol. 18, 1897.

² Hack Tuke's Dict. of Psychological Medicine.

³ Lehrbuch der Psychiatrie, 1904.

⁴ Text-book of Mental Diseases.

⁵ Arch. de Physiol., 1892, Vol. 4.

the muscular weakness following the removal of the suprarenals is due to toxic substances of a similar nature to those producing physiological fatigue, and that the functions of the adrenals is to supply antitoxic substances.

Lee⁶ thinks it is more probable that the true explanation of the muscular asthenia in persons suffering from Addison's Disease is due to the absence of the normal tone-producing internal secretion of the bodies in question.

Whatever may be the true explanation of the asthenia in this disease, whether it is an autointoxication, which by some is considered the agent at work in all exhaustion psychoses and neuroses, or whether it is the absence of the normal secretion, it is to be expected that the central nervous system will react under certain conditions.

In this case, not until the factors contributing to the exhaustion had existed for some time were mental symptoms produced. An analysis of these symptoms shows a striking similarity to the known symptoms of cerebral exhaustion. The slight irritability, the diminution of the volitional impulses, the incapacity for mental application, the thinking disorder, and the sensory disturbances are indicative of a psychosis due to exhaustion. It is only fair then to assume that the mental disturbance in this case does bear an etiological relationship to the somatic disorder, and that we have an exhaustion or asthenic psychosis on the basis of Addison's Disease.

On the pathological side the findings would appear to confirm the original theory advanced by Addison, namely, that the disease depends upon the loss of function of the adrenals, the blood in consequence being poisoned by some material, the destruction or alteration of which is a function of these glands.

Lugaro in the *Handbuch der Pathologischen Anatomie des Nervensystems*, 1904, in his description of the changes in the sympathetic ganglia states: "Among the diseases which are considered as being associated with sympathetic diseases are Basedow's Addison's, and diabetes mellitus, but in all of these the pathological significance of the observed sympathetic lesions is very doubtful. . . .

⁶Frederic S. Lee, Fatigue. *Journal A. M. A.*, May 19, 1906.

“ As it is known the most frequent and most important lesion in Addison's Disease is found in the adrenals. In the great majority of the cases there occurs a tuberculosis of the adrenals which often presents caseous nodules. Instances of carcinoma and sarcoma are mentioned. In the sympathetic system the adjacent semilunar ganglia and the nerves of the solar plexus are the ones which are mostly affected. That this sympathetic disease is only secondary can be shown by many cases in which the semilunar ganglia and the nerves of the solar plexus do not show any important changes but in which there are changes in the adrenals ”

INSANITY AND SUICIDE.

By CHARLES W. PILGRIM, M.D.,

President N. Y. State Commission in Lunacy.

That insanity and suicide are increasing out of proportion to the increase of population cannot be denied. The statistics of England, as well as those of the United States, show beyond doubt that there is a disproportionate increase in the number of insane to the general population, which cannot be explained by the oft-repeated statements that this increase is due to the accumulation of old cases whose lives are prolonged by the better care of the present time.

In the State of New York, where statistics are kept with unusual care, the State Commission in Lunacy, in its Seventeenth Annual Report which has just been prepared, states that in 1892 the population of the State was 6,513,343, and the number of insane in all of the institutions of the State was 17,275, a ratio of one insane person to 377 of the general community. On the 1st of June, 1905, the population of the State was 8,066,672, and the insane under treatment in the different institutions amounted to 27,300, a ratio of the insane to the general population of one to 299. In addition it is estimated that 6000 insane persons are being cared for in their homes in the State of New York, which would bring the ratio to the alarming figures of one insane person to every 242 of the general population.

An increase similar to that in the State of New York is reported by the Commissioners in Lunacy of Great Britain. I think, therefore, we must admit the unpleasant conclusion that there is an undue increase in the number of the insane.

That suicide is also increasing at a rate to cause surprise and alarm is positively shown by the statistics which Mr. Frederick L. Hoffman, statistician for one of the great insurance companies, has carefully compiled. The compilation of these statistics was begun in 1890 and they relate to fifty American cities. From year

to year the same sad story is told of an increasing propensity to self-destruction. In 1890 the ratio was twelve; in 1900 it was sixteen; while in 1904 it had risen to nearly twenty per 100,000 of the population.

San Francisco, which has attracted so much attention of late, far exceeds any other American city in its ratio of suicides, and it has made rapid progress in this direction since 1890. In that year the rate was 23.7, in 1900 it was 49.9, and in 1904 it was 72.6 per 100,000 inhabitants. These figures were so much in excess of those from any other city that I entered into correspondence with Mr. Hoffman in regard to their accuracy and causes. Mr. Hoffman admitted that the facts were difficult to explain but he was inclined to believe that the unusually high rate was due to an excess of males in the population, to the high percentages of foreign-born, especially the Germans and Chinese in whom the suicidal tendency is very common, and to an excess of more than 13 per cent of the population of those between the ages of 20 and 64, the period in which practically all suicides occur. The location of San Francisco is also favorable to a high suicide rate. It is a port, a terminal station, and a supply center for a vast mining region, and among those who "pitch their tents on its trembling soil" there is always a large number of promoters, prospectors, and speculators who are successful to-day and failures to-morrow.

Next to San Francisco, Hoboken bears the unenviable reputation of having a record of nearly 38 per 100,000, which is about twice as high as the general average. St. Louis, Milwaukee, and Chicago follow close behind. The high percentage in these cities is probably due to the large German element among the residents. New York does not greatly exceed the general average, and this condition is undoubtedly due to the large proportion of Hebrews which it contains, it being well known that those of the Jewish faith have a strong aversion to self-murder.

New Bedford, Fall River, Lynn, and Lowell, all New England factory towns, have a very low suicide rate, varying from three to eight per 100,000 of population. The low suicide mortality in these cities is largely accounted for by sex distribution and nativity just as we have antithetically accounted for the high rate

in San Francisco. In all factory towns there is an excess of females over males and in the New England towns mentioned nearly 50 per cent of the foreign-born population have Canadian mothers. As the United States census of 1900 shows that the suicide rate is extremely low in those born of Canadian mothers this is an important consideration. But despite the differences due to local conditions the statistics of the country as a whole bear mournful testimony to the ever-increasing tendency to suicide and insanity; and this increase is but natural in view of our cosmopolitan population and the conditions of stress under which we live.

It is a truism that the more complex our civilization and the greater the opportunities for failure and disappointment, the greater will be the tendency to self-destruction. The advances and progress of the last few years, while making life more attractive for the few, have made it more difficult for the many. Our wants have increased faster than our ability to supply them. Wages have not increased as rapidly as has the cost of life's necessities. The mechanic, the tradesman, the professional man, and the man of wealth are all travelling at "the pace that kills." It does not matter whether that pace is in the pursuit of pleasure, the acquisition of riches, or the effort to secure the bare necessities of life, for the result is too often the same—the clouded brain or the suicide's grave.

Education also has made the masses dissatisfied with their conditions of life and the extension of pseudo-scientific doctrines has weakened religious sentiment. Too many are filled with pessimism which later leads to despair. Too many are willing to cry as Thomson does in "The City of Dreadful Night":

"This life holds nothing good for us,
But it ends soon and never more can be;
And we knew nothing of it ere our birth
And shall know nothing when consigned to earth;
I ponder these thoughts and they comfort me."

When one begins to find comfort in such thoughts as these it is very easy to go a step further and to say with the same author:

"If you would not this poor life fulfil,
Lo, you are free to end it when you will
Without the fear of waking after death."

How far actual insanity is responsible for suicides outside of hospitals for the insane is a very difficult question to settle. That suicide in itself is proof of insanity no modern alienist will admit. It is true that early in the century Esquirol contended that all suicides were insane and his theory that the act was so opposed to the natural instinct of self-preservation that only one who was insane would commit it, was accepted and advocated by many French alienists of note. Dr. Forbes Winslow in England advanced the same doctrine, and although the idea was never generally accepted by moralists and scientists, it appealed to the lay mind and is to-day quite universally approved by public opinion, for it is but natural for the friends who are left behind to find comfort in the thought that the deed was due to that convenient form of mental trouble known as "temporary insanity." But the cold facts adduced by careful investigation do not bear out this popular belief. Dr. Wynn Westcott, who has made an exhaustive study of this subject, found that in only twenty per cent of the cases which came under his notice as deputy-coroner for Central Middlesex, had the friends suspected insanity or noticed any signs which would have led them to believe that the suicide was suffering from mental disease. Other authorities put the proportion at about one-third of all the cases, and Dr. J. J. O'Dea adds still another third which he considers due to "latent insanity." Anything like accuracy, however, is impossible on account of the great difference of opinion as to what constitutes insanity, for the lay jury and the experienced alienist by no means agree. Even the latter cannot always tell just when one leaves "That dismal borderland between the dusk of simple depression and the night of lunacy." Some light, however, is thrown on this question by an examination as to the mental condition of those who have unsuccessfully attempted self-destruction. In England statistics show that only about four per cent of those who are charged with attempting suicide are found to be insane. Many, of course, are on the borderline and many more are subjects of drugs or drink, the attempt at suicide being merely the culmination of a career of immorality and dissipation, but those who present marked evidence of brain disease are few indeed.

Dr. Strahan, in his interesting book on suicide and insanity,

divides all suicides into two classes, rational or quasi-suicide, and irrational or true suicide. He subdivides rational suicide into two classes, namely: (1) Those who destroy their lives that they may gain something which they value more highly than life, as, entrance upon the joys of paradise, the fellowship of departed friends, etc., and (2) Those who commit the suicidal act that they may escape some real and impending evil which they consider more terrible than death, as, slavery, physical suffering, dishonor, and the like. To the first subdivision belong the cases of pagan times, and also those of early Christian days, while in the second we must place many cases of the present day.

One of the most notable cases of recent years to be placed in this subdivision was that of Whittaker Wright, an English mining engineer and chemist, who killed himself at the Royal Court of Justice, Strand, shortly after he had been sentenced to seven years' penal servitude. Wright was a man of education and influence and had succeeded in involving many prominent persons in his fraudulent schemes. He was at length arrested, brought to trial, and convicted. He was removed to a private room, which had been assigned to him during the trial, and after conversation with his solicitor for a few minutes in regard to the steps necessary to be taken to secure a new trial, he suddenly began to breathe heavily and in a few minutes expired. The coroner's inquest revealed the fact that his death was due to cyanide of potassium, and the coroner in reviewing the case said: "It is certain beyond all doubt that he took his own life, and it is clear that he took it knowing exactly what he was doing. There was no suggestion of insanity, but there was an extremely strong motive explaining why he acted as he did." The jury rendered a simple verdict of suicide.

Another case almost identical, which occurred during the past few weeks, is that of a follower of Father Gapon who dramatically committed suicide while an investigation of charges of embezzlement was being made against him.

In the same classification may be placed the suicides of the Russian prisoners described by Deutsch in his "Sixteen Years in Siberia," in that intensely interesting chapter called "The End of the Tragedy." These suicides also strikingly illustrate the

manner in which the act may spontaneously assume an epidemic form. In describing the sufferings of the prisoners he says: "Terrible days followed. I find it hardly possible to describe our state of mind. It was not depression that we felt but deep agitation and gloomy resolution." Later came tidings of the suicide of three women who had been flogged. Deutsch continues: "On hearing these tidings many of our members silently resolved, without any discussion or consultation, to follow the example of the women. They got poison outside and determined to take it after roll-call one evening. No one asked who was going to join in the act, but each man who had made up his mind to it possessed himself of a portion of the opium that lay on the table in every room.

"Seventeen men—seventeen out of the nine and thirty that made up our number—had resolved to put an end to their lives. On the appointed day, after the evening rounds, singing was heard in the 'Yakutsk Room' where were Bobohov and Kalyushny, and the greater number of the others who had determined to die, though there were some in every room—two in ours. This singing was the signal to them all. Those who were to die then took leave of their comrades and swallowed the poison." Fortunately the opium had lost its strength and their purpose was not effected, but the frustration of their design did not weaken their resolution and they determined to take a more potent drug. They secured a supply of morphia and the next evening the farewell scene was repeated. The morphia also proved poor in quality and though it made them very ill, the most of those who had taken it recovered. "But," the author continues, "Bobohov and Kalyushny having taken a treble dose speedily became unconscious. In the night Bobohov awakened yet once again. He heard Kalyushny's throat-rattle and tried to rouse him, covering his face with kisses. When he saw that his friend would never wake more he seized a whole handful of the poison, swallowed it, and lying down beside Kalyushny, closed his eyes forever."

This story, told by Deutsch, without the least attempt to excite the sympathy of the reader, is an admirable illustration of "rational suicide." These men were willing to die, but they would not be flogged.

It is not uncommon for suicide to result from purely business or financial vicissitudes. Only a few years ago the newspapers contained an account of the suicide of a once widely-known and successful lawyer. He became sick and business reverses resulted; his fortune slipped away and he found himself without the means of obtaining the comforts to which he and his family had been accustomed. With health so much impaired that it seemed as if it would be impossible to ever regain either professional standing or fortune, he calmly reviewed the situation and decided that it would be better for his family to realize on his \$30,000 life insurance policy than for him to struggle on. He wrote a letter to his wife, going carefully over the situation, just as he would have discussed a legal proposition, and then calmly put an end to his life, which, by logical process he had decided was not worth living.

The fact that under stress and financial reverses there are not a few who think less of their own lives than they do of the comfort of those they are to leave behind is well recognized by insurance companies, and much attention has been given to the subject.

An extremely interesting study of suicide as an insurance problem was made a few years ago by the Supreme Council of the Royal Arcanum. As far back as 1886 the number of suicides in the Order attracted attention but no definite action was taken until 1897, when a special committee was appointed to investigate the subject. This committee discovered that there was a constant increase in the number of suicides among the members of the Order. During 1888 to 1892 the average rate was 25.4, while from 1893 to 1897 it was 41.8 per 100,000 members. The committee states that there was positive proof in many cases that the payment of the death benefit was an important factor to the despairing men who took their lives, and that in many others there was an "established intention to defraud the Order."

The final conclusion of this committee was that the constitution of the Order should be changed so as to provide that no benefit should be paid to the beneficiary of a man who committed suicide within five years of his admission to the Order except when undoubted mental disturbance had been shown. As a result of the change the suicide rate fell from 41.8, as above stated, to 36.5 per 100,000 members during the five years ending with 1903.

The conclusion that this change in the constitution was the cause of this noticeable reduction is strikingly proven by Mr. Hoffman, whose tables show that the ratio of suicides among those of less than five years' membership decreased from 15.6 per 100,000 members during 1893 to 1897, to 6.3 during 1899 to 1903. He also shows that in marked contrast to this decrease during the first five years of membership there was an increase in the ratio of those who had been members of more than five years' standing. This increase was from 26.2 to 30.2 per 100,000 members. In other words, the decrease in the suicide mortality of the Order has fallen entirely upon the members who have been insured less than five years, thus showing that the suicide law of 1898 was justified and really acted as a deterrent in a large number of cases.

So common has suicide and suicidal attempts become among those who believe that life offers no adequate return for the struggle, that societies have been formed in several cities to offer encouragement and relief to those who are about to sink by the way. This movement was started in Cleveland by Mayor Johnson, who appointed a "Suicide Commission" whose duty it is to fix the cause, and, if possible, to apply a cure. The Charity Organization Society of New York has taken up the same work and particular attention is paid to those who have attempted suicide and failed. Such persons are provided with work and are encouraged and assisted in every possible way. Although the work is comparatively new good results have been reported from several quarters.

In Strahan's second division of irrational or true suicide are included all those who are impelled to destroy their lives when insane, those who commit the act without reasonable cause or out of irritation, and those who after a longer or shorter struggle, succumb to a growing impulse which has become irresistible. Such persons seek death because of a fatal defect in their organization which draws them instinctively toward the grave just as in normal individuals the desire for life impels them to preserve it at any cost.

That this indifference to life is quite pronounced not only in certain individuals, but even in nationalities, is a well-known fact. The ratio of suicides is very high among the Germans, Scandi-

navians, Bohemians, Russians, and French, while it is very low among the Irish, English, Canadians, Scotch, and Italians. In London, where there is as much want and degradation as anywhere in the world, the suicide rate is no higher than it is in Philadelphia, the city of homes and comparative comfort. We are, therefore, forced to the belief that suffering and hardship are not always the most potent factors in abating the love of life, but that in many individuals inborn traits of character and mind exist which make the act of suicide easy to embrace when a few clouds obscure the brightness of their lives. It would also seem that those who are born with this craving for death, or in fact, with the mere indifference to the prolongation of life, should be no more blamed for committing the act than the man who is color blind should be blamed because he cannot distinguish the spectrum's rays. In the language of Dr. Strahan: "There is nothing more voluntary in the death of such an one by his own act than there is in the silence of the mute, the jibbering of the idiot, or the convulsion of the epileptic."

It is irrational or true suicide with which we as hospital physicians have mostly to do. Although some authors have given an entity to suicidal insanity and have made it a distinct form in their tables of classification, I think that we will all agree that it should have no such prominence, for the suicidal tendency may occur in any form of mental disease. Of course it is much more common in melancholia, especially that due to involuntional changes, than in any other form. This applies particularly to women, for in the cases which I have examined 80 per cent of those manifesting suicidal tendencies belonged to this form. In fact four out of every five cases of melancholia, in both sexes, are suicidal to a greater or lesser degree and at least one in every twenty is dangerously so. In melancholia due to alcoholic excesses dangerous suicidal tendencies exist in more than half the cases, but in the majority of such cases, when the exciting cause is removed, the suicidal tendencies soon disappear.

In addition to melancholia we find suicidal tendencies in acute hallucinosis, dementia præcox, the toxic insanities, and occasionally in paranoia, and even in general paresis.

The United States census of 1900 shows that in outside life

the suicidal act is more than four times as frequent in men as it is in women, but in the insane the women more often present suicidal tendencies than do the men. These tendencies are also more persistent, but notwithstanding this fact the number of suicides in hospitals for the insane is not so great among women as it is among men on account of the fact that men have more opportunities for carrying out their desires.

I have carefully examined the records of the suicides in the hospitals for the insane with which I have been connected during the past twenty years and in doing so found some interesting facts. I will not weary you with all the details but will summarize the results of my examination by saying that more than half the cases occurred either in April or September, and that an equal number occurred in the early morning hours. I also found what is well known in the outside world that the suicidal tendency generally occurs at an earlier age in women than it does in men. In the cases which I investigated nearly all the women were between the ages of 30 and 45, while the men were between 45 and 60. The United States census of 1900, already referred to, demonstrates the truth of this observation in a striking manner. A table there given shows that between the ages of 15 and 44 the suicides among the men were only two and one-half times as great as among women, while after 45 the suicides among women were so lessened that the ratio was changed to seven suicides of men to one woman. Hanging was the method used in more than half the cases which I investigated while nearly all the others were due to cutting of the throat. Several cases were seized with the suicidal desire upon seeing knives near at hand, which proves the truth of King John's statement that often

"The sight of means to do ill deeds
Makes ill deeds done."

The treatment of suicidal tendencies in the insane, aside from the general medical treatment indicated by the physical condition, is, of course, constant supervision, and the means adopted in our hospitals for the prevention of suicide are so well known that nothing more need be said. But the prevention of self-destruction in the rational class is not so easy of accomplishment and

entirely different methods are necessary. The silence of the pulpit on this subject is noticeable; the sensationalism of the press is pernicious; therefore, it becomes all the more necessary for moralists, scientists, and teachers to endeavor to raise the moral tone of the community by creating a sentiment against self-destruction.

There is nothing more firmly established than the fact of the transmission of the suicidal tendency. This tendency is not only very apt to reappear in the offspring but it is not unusual for it to appear at the same age that it appeared in the parent, and often the same means are sought to accomplish the end. Therefore, it seems reasonable to expect the accomplishment of considerable good by the efforts of our own profession to prevent marriage where any hereditary taint exists.

As pessimism and depression more often follow ease than struggle occupation for body and mind is one of the best remedies in the early stages of the disease. If the interests of the would-be suicide can be directed into channels where his attention will be fully absorbed, he may, in a little while, be induced to again face life with interest. In the same way travel and change of scene are sometimes effective.

The societies already mentioned will undoubtedly accomplish some good results, but I believe the greatest good of all will come from the development of hope and religious faith. By this I do not mean that mawkish sentimentality for which some preachers plead nor that placid resignation which is akin to despair. But I do mean that we should try to instill into the minds of those whose hearts are sorely tried that healthy doctrine of hope and faith which makes one self-reliant under trials and adversities, and which Browning emphasizes when he says:

"But what if I fail in my purpose here?
It is but to keep the nerves at strain,
To dry one's eyes and laugh at a fall
And baffled, get up and begin again."

Professor James has said that reflective men are particularly prone to *tedium vitæ*, and that too much questioning leads to the edge of the slope, at the bottom of which lie pessimism and the suicidal view of life. This is undoubtedly true for to many of us

grave doubts have come, and with some of us they still remain, as to what awaits us beyond the tomb; but, as Cicero has said, is it not better to be mistaken with Plato than to be right with those who believe there is no life beyond the grave?

Walt Whitman's healthy vigor and the mere joy of living which he felt should be emulated, and the teachings of Browning "who ever looked above the storm clouds of this lower world to the unsoiled blue of Heaven" should be ever kept in mind. On the contrary every effort should be made to keep in the background the unhealthy pessimism of Leopardi, Thomson, and others of a similar cast of mind. Instead of teaching that

"This little life is all we must endure,
The grave's most holy peace is ever sure."

it is far better, to my mind, even though science may not prove our claims, to endeavor to spread that satisfying spirit of optimism which will enable us to say:

"It is our trust
That there is yet another world to mend
All error and mischance."

IS DEMENTIA PRÆCOX THE "NEW PERIL" IN PSYCHIATRY?

By J. T. W. ROWE, M.D.,

*First Assistant Physician Manhattan State Hospital, Ward's
Island, New York.*

The few local observations on this popular psychosis presented here suggest the trite old couplet:

"Tis the sad complaint, and almost true,
Whate'er we write, we bring forth nothing new."

The advent of dementia præcox, like other exotics received with enthusiasm, has resulted in an eruption of articles on that entity. While it did not, like the young Lochinvar, come out of the west, many of the recent articles describing it exhibit the vigor and breeziness of that region. Some have the force and dogmatic utterance of the small clinic and the smaller general practice. Others savor of the larger asylums, not wanting so much in population, as in a larger purview of the subject. Some of the cases illustrated combine all the types in one, so all-embracing is it to the chroniclers; while others again exhibit a wealth of detail which could never have been met with, except in the pages of the foreign text-book. Still other cases are made to demonstrate every sign and symptom of classic requirement. What new ones they contain can only be conceived, for they have been made to exhibit all the phenomena established as proper to dementia præcox. The same monotonous and inexpressive jargon meets you in each appearing article. The paucity of actual observation and clinical material is equalled only by the bibliographical zeal.

To begin with, I think much harm may be done by the unfortunate term, as well as by the gloomy prognosis of those in a position of authority to speak. Dr. Jones, the superintendent of the London County Asylum, said in an ex-cathedra tone, "dementia præcox is now so common that it may almost be described as the

scourge of our asylums, for it attacks prematurely our most promising youth. It is practically incurable, and will fill our asylums of the future with the hopelessly insane." The cloud, fortunately, has a brighter lining, for the British asylum statistics do not bear him out in his fears. We do not know whence his evidence is derived, but we do know that in our own clinical experience the educated and more enlightened, and even the mentally hard-working, are not the groups from which the most of the hospital inmates are recruited. These quickly seek medical advice, which can frequently ward off the impending danger.

With our wealth of clinical material, it must follow that the disease, dementia præcox, is frequently met. As a matter of fact, we have the best clinical types to be found in any asylum in the world. We have this disease in all its gradations, from the almost speaking clinical picture to that exhibiting a group of morbid symptoms so slight that to discover sufficient justification for stamping it dementia præcox is an almost hopeless task to our zealous young clinicians at staff meetings.

As in great waters are found fin and feather in infinite variety, why should we not at this hospital, fed by a huge cosmopolitan metropolis, teeming with the flotsam and jetsam of human wreckage, have the greatest variety of psychoses known to alienists? But if we are frank, we cannot subscribe to the teaching that dementia præcox is paramount or in the ascendant here. The doctrine is not sound. We must dissent. I think the more we see of undoubted cases of dementia præcox, the better the outlook is for the patient and statistics. Scores of cases so closely resemble dementia præcox in symptom-complex and termination that it is surprising more are not stamped as such and transferred from active observation to the rubbish-heap from which the psychiatric "finds" have been extracted, to get well as best they may. The long list of morbid mental states just on the border line, embracing adolescent dementias, the depressions with confusion and stupor, post-alcoholic psychoses, hypochondria and neurasthenia, the great variety of neuroses and psychoses associated with imbecility,—if these cases are checked in their progress, they respond quickly to treatment, but the care must be unceasing. Then most of them will get well, as they would have done had they

received proper medical care outside, and thus made the certificate of insanity unnecessary. These forms of insanity are often the result of exhaustive and toxic states, and neuroses unrelieved.

I cannot understand why continental thought should set the pace for the rest of the world, more especially for this country. With an admission of nearly two thousand patients annually, examined under the most exacting system of analysis, and subjected to the criticism of a large medical staff, we are still influenced and guided by the dictation of foreign savants and writers, and we are asked to bolt unquestioningly the conclusions they have derived from sometimes very limited fields of observation. It is high time we made our own the predominating statistics in this country, and stood by them. Any others are likely to be at variance with the conditions and environment prevailing here. The question is too often asked at court and clinic, "Have we read what Prof. von So-and-so writes or has observed," which soft impeachment we have to deny, and by our confession of ignorance are, I suppose, placed quite outside the pale. If we have been locked in "some pent-up Utica," is it not time that we emerged into the freer atmosphere of independent thought and our own conclusions?

There are no new forms of insanity that I am aware of. This much most of us are agreed upon, except in the newspapers and novels, and finesse in diagnosis is not so important as saving from classification, as dementia præcox, the cases closely resembling it, but which escape the unfavorable prognosis imposed by the name and surprise us by a return to a condition of mental health. The question arises then, What shall we consider dementia præcox? I would confine the name to those groups of insanity occurring in the adolescent period and tending to dementia. I would restrict it to a period not later than the adolescent age, and I would make it a *sine qua non* that the inclusive stages of mental deterioration be reached rapidly. Psychical enfeeblement, with relative integrity of memory, disappearance of the effective feelings or emotional tone, apathy, dissociation between memory and judgment, and a primary normal mental condition ending in early breakdown.

The physical signs in dementia præcox are not reliable and

should not be taken too seriously. They are seen in other forms of insanity, and may be indefinite or accidental. When we have a case appearing at the period of pubescence, or a little later, with languor and inattention, the mental powers too sluggish to assist the patient in recognizing his condition or surroundings, with hallucinations of hearing and the progressive character of the mental deterioration demonstrated, we are reasonably safe in diagnosing it dementia præcox. But I would stand firmly for the psychical enfeeblement, diminished attention, and dominating apathy, and as a clinical picture is necessary to a concept of the disease, I would urge that dementia præcox should imply a dementia that is primary and present from the beginning of the disease, although its recognition may be obscured by transitory episodes. Some of these may be only faintly discerned. Then the patient is entitled to the benefit of the doubt. Many of the cases we see are not degenerative cases. They show but little disturbance of attention and impairment of judgment, and such as it is, may be secondary to some acute psychical disease of which we have no knowledge. We should not try to fit the patient to the diagnosis. The *materies morbi* is necessary, for the true precocious dement is to the manner born. In many the age of adolescence has long been passed.

As for the anatomical stigmata of degeneracy,—what do they indicate? They may be seen at any gathering of people of all ranks, in the pulpit or in the prize ring. At this stage of life almost any mental weakness may reveal itself,—derangement of function, the strain of development special to some, the explosive emotional states, boastfulness and sexual depravity of the ill-balanced—a tremendous amount of insanity that is not dementia præcox comes to us. The entire gamut of symptoms peculiar to dementia præcox may be found in imbeciles, the constitutionally defective, tramps with stigmata suggesting the workhouse or prison, the ill-balanced lad blowing off the emotion of youth. The boy who can never learn at school and is inclined to wander away, who cannot settle down to any kind of occupation, is likely an imbecile. Some exhibit intense stupor closely resembling dementia. Many are harmless and industrious, and although too deficient mentally for much initiative or progress, are capable of useful employment and of earning their own living. Why saddle

upon these the term "dementia præcox"? It hampers their convalescence, puts a taint upon them, and keeps them in the background. They are mentally unstable, but under careful supervision, if their young manhood be passed in an orderly and systematic manner, in employment adapted to their capabilities, recovery and escape from future attack may be fairly assured.

It is not the most intellectual classes or those who are hard-worked mentally who supply us with morbid conditions. They don't supply the dementia præcox cases, or those so-called "allied" cases. The flower of our youth may give us the true psychoses, well cut and definite, if any. Our cases of defect and deterioration come largely from foreigners, soft, undeveloped, the flotsam of congested agrarian districts and poverty-stricken surroundings, unaccustomed to active competition at home. The sundering of home ties, followed by wretchedness and homesickness, is the first step in their decline. Then you have these poor peasants coming into competition with the fittest, living in confined quarters with insanitary environment and reeking of filth. The want of proper adjustment of forces and work results in nutritive and nervous exhaustion, insomnia, indigestion, auto-intoxication, and the pace kills or turns to insanity.

A propaganda should be urged to deal vigorously with this blight so peculiarly incidental to youth and adolescence. I firmly believe that if the conditions causing insanity were fought as vigorously and determinedly from the press and platform as are those of tuberculosis, alcohol, and syphilis, and the co-operation of the general practitioner and of organized charity, was obtained to prevent it in its incipency, there would be no need for the large and increasing appropriations so regularly asked for. The steady and alarming increase of insanity would cease, the breadwinner would be preserved to his family, and he and they would be spared the stigma of mental incapacity and the horrible fear of transmitted disease. The State would be spared the task of maintaining the patient, and the family escape the degradation of becoming the subject of public or private charity.

The truth is that men, women, and children are overworked. They live amid struggle and stress unknown to other times. These conditions predispose to nervous disorders which become

progressive. Stress and medical neglect do the rest. We see them dull, stupid, and apathetic, with an indifference due to their inherent mental defects. Should we be surprised at the differences and contradictions they represent? These are no doubt unimportant differences in the clinical pictures, due to the different constitutions of individuals at different ages, but these differences are not sufficiently grave to constitute distinct diseases or dementia præcox. Certain clinical pictures give us definite forms of insanity, but how few are the distinct convincing clinical pictures we meet with here. The treatment of many of these cases might have been left in the hands of the general practitioner, showing, as they do, incredible ignorance and disregard of ordinary rules of health. Some need never have been committed to a hospital for the insane, had their downward course been halted, so dependent were they upon environment.

These so-called dementia præcox cases, crippled mentally, should not be shelved or submerged. They should receive undiminished care and treatment, with regular outside work, adapted to their capability. We don't relegate weak and worn-out ships to idleness, or lay them aside as forever useless. They are put into a trade fitting their capability and restricted to smoother waters where they escape the storms and buffetings of rough seas.

Some day when after care is a part of the sociological body, the helping hand which was not put forth, or not availed of when it might have averted the malady, will take in charge the weakling and the hard-pressed, whose complete recovery is handicapped by stress, and avert threatened relapse.

The knowledge that an After-Care Society stands ready to aid this class, would relieve the patient of his anxiety and hasten his convalescence while in the hospital. We meet with many cases where the patient and friends show ill-concealed anxiety for his future condition after his discharge.

These cases are not rare birds. Twenty years ago we had the same class,—apathetic, listless, and indifferent. They pursed their lips, touched spots repeatedly, had mannerisms and peculiarities, and were a mingling of stupidity and silliness. When at home, they wandered away or stopped work and masturbated. It is flattering to note that the Kraepelinian theory of auto-intoxication and the infection with the products of the sexual organs was

even then held by us, for that form of insanity was irreverently referred to the region below the belt. Many of these cases are congenital and have a primary defect, but with rest in bed, forced feeding, strict discipline, and outside work, many are restored, the friends fortunately accepting and acting upon the advice of the physicians.

I am not a lauder of the times past, but there is a disposition to-day to belittle the opinions and views of two or three decades ago. We must judge the workman by his tools, and in the light of modern research, with its endless list of instruments of precision, diagnoses and conclusions are not more accurately or quickly made at the present time than at that period. I have in mind some exceedingly accurate and creditable diagnoses in the early stage of these cases, as well as in incipient general paresis; and my conviction is, that powers of observation were not a whit less keen then than at present. Our modest armamentarium in those days consisted of a Mickle, Greisinger, Maudesley, and Bevan-Lewis, whose pages afforded very few novelties. The type has changed somewhat perhaps, colored by the new industries and scientific discoveries, new forms of dissipation, and other modifying influences, but the essential indicia for the correct understanding of this class of cases remain, and always will remain, except in individual cases, whose unimportant details do not affect the majority of cases.

The new psychiatry has brought into frequent use a jargon of words and phrases which seems stilted and pedantic, until you acquire the vocabulary of machine-made histories. These are couched in specific and precise words, and as alienists are by no means unanimous in the acceptation of their meaning, the patient's case is more or less at the mercy of their vagaries of understanding. We should, above all things, use plain, every-day words that convey their full meaning to the medical man. As it is now, after reading the history of a case of modern psychiatry, we are left with the impression that the reporter was, in the words of Disraeli, "inebriated with the exuberance of his own verbosity." In the iteration of stilted words, indefinite and unconvincing, we get an "intolerable deal of sack," so little do they convey. I would run a tilt against the word, "*Deterioration*," as Don Quixote did at the windmill. This has such a wide meaning in

psychiatry that we ought to have some fixed idea of its value. As accepted now, its meaning is infinite and chaotic. Who shall say what deterioration is,—the extent of it, its degree? The question is put in a routine fashion, "Is there deterioration"? "From what"? we ask. If we knew the patient's normal condition, we can say with Hamlet, "What a falling-off was there."

The patient doubtless does show deterioration or impairment or a condition inferior to that expected in a sound or normal man, but unless we know his normal state, the word can have little value and becomes a most misleading finger-post. We, ourselves, are dying by inches every day, and falling from our normal state,—deteriorating. The phrase is often interwoven with confusion and stupor, but who is able to demonstrate it! It is in paranoia and manic cases, if misinterpretation of the small things is taken at its proper value. Take, for instance, the patient once considered a paretic, who is readmitted. He has no physical signs nor delusions. Ergo, he is a case of dementia præcox, but there is no deterioration. A former manic depressive case with physical activity and mental exaltation, stamped manic, returns in confusion and dilapidation, wet and unclean. Deterioration being the keynote, he perforce must be a case of dementia præcox. It seems to be a word to conjure with. A paranoiac case lacking the acceptable clearness of intellect just fits the paranoid condition; but, lo! deterioration is discerned by some one, and he becomes, *ipso facto*, dementia præcox. It may not be absolute,—only partial. The performances and behavior may show a falling off only in certain fields of action, but who shall indicate the degree and its import? The word is like the Hidalgo's dinner,—a great deal of table-cloth, and very little meat.

Then there is that other word, "*Retardation*." That is indeed a word to try our acumen, and is at the same time our despair.

Between the claims of deterioration and those of retardation we are in a dilemma, and feel how happy we could be with either,—alone. It hangs like the sword of Damocles over the patient. Is he to be held by the minority retarded with depression, and bear the hopeful prognosis of manic depressive insanity,—or by the majority apathetic, indifferent, stupid, a case of dementia præcox, and therefore unfavorable for the patient.

Few are agreed as yet upon the name or the psychosis of this interesting and popular entity. Long-drawn-out discussions and the submitting of statistics lead to nothing definite. 'Tis an easy thing to argue the other side. My plea is for facts,—something specific, that carries conviction with it, and that will enable us to say, "Ecce signum." A clinical picture is necessary to a concept of the disease, and the predominant symptoms are what in the majority of cases will give us the classification. I would throw out the weak, meaningless, ill-defined symptoms which serve only to confuse and lessen the worth of more reliable data; and the stilted verbosity and generalization should be replaced by constant and well-cut symptoms true to the disease. These not being present, I should hesitate before stamping it dementia præcox. We should not be pessimistic in this disease, dementia præcox; if we can provide comfort, we ought to do it. Every other disease has been modified and robbed of its terrors by advanced methods of treatment. Let us above all be hopeful. It means so much to the patient and humanity. Take the words *cancer* and *consumption*. We have substituted less terrifying, but equally expressive words, which tend to allay groundless fears. That a little knowledge may be a dangerous thing has been impressed upon me more than once by the glib inquiries of the patient's friends as to whether the patient has dementia præcox. They have been informed by so-and-so that it might be that; so their fears regarding the increasing ravages of this disease have to be quieted.

The rôle of alarmist is fortunately offset by the increasing confidence in the curability of this class of patients. Now that after-care for discharged patients is promised, let us plead for a little more care and observation by the dilettanti and the general practitioner *before* insanity. It is like putting the cart before the horse, to wait until after commitment, or until he is discharged, before assisting the patient. A vigorous crusade should be instituted to prevent insanity. If it was combatted with the same vigor as is tuberculosis, what an astonishing difference it would make in the annual reports of hospitals for the insane.

THE CEREBELLAR-VESTIBULAR SYNDROME.

By ISADOR H. CORIAT, M. D., BOSTON, MASS.,

*Second Assistant Physician for Diseases of the Nervous System,
Boston City Hospital.*

In harmony with the existence of a cerebral anæsthesia (Verger), or of a central neuritis (Adolf Meyer), there can be postulated a "central ataxia," as an equivalent of the larger term "cerebellar-vestibular syndrome." By this is meant an ataxia combined with disorders of equilibrium and locomotion, and an inability to orient the body in space. In these cases the lesion would consist of an interruption or perversion of currents concerned in the complex sense of orientation, due to lesions of the vestibular nerve in its central course, of the cerebellum, cerebellar peduncles or pons, the restiform bodies, the cerebellar-olivary fibers, pressure upon the so-called somæsthetic area of the cortex, or of the internal capsule or basal ganglia. In hereditary ataxia, as has been well established by the recent studies of Barker, the lesions are both central and peripheral; in the cord, degeneration of the gray and white matter with an abnormal ratio between their areas, in the brain, the changes involve chiefly the cells and fibers of the centripetal paths of the medulla and cerebellum.

The chief symptoms in a lesion of this type would be an agonizing vertigo or sense of rotation, nausea, inability to correctly appreciate rotation in a horizontal plane with the eyes closed, forced movements and a cerebellar-ataxic gait.

Although the symptom-complex is comparatively rare, yet some cases have been reported. They would comprise the labyrinthine ataxia of Déjerine, Ménière's disease and sea-sickness, Starr's case of traumatic injury to one auditory nerve, the vestibular ataxia of Raymond and Egger, certain bulbar disturbances of equilibrium, either primary softening (Bourgeois, Reinhold), pressure of an aneurism (Ladame and Monakow), tumors of the floor of the fourth ventricle (Knowlton) lesions involving the cerebellar-

olivary fibers (Henschen), and finally ataxia due to lesions of the hemispheres or the basal ganglia (Grasset). Perhaps in this group can be placed those cases of hysterical astasia-abasia, where the lesion is a functional one in the central association tracts, a kind of a dissociation ataxia, the result of a subconscious, fixed idea. On account of the comparative rarity of the cases and in order to show their close relationship to our observation, so as to postulate an ataxia of purely central origin, a short account of the work of other observers seems justified.

Under the name of labyrinthine ataxia, Déjerine places those disorders of the internal ear which produce affections of gait and equilibrium analogous to cerebellar disease. The symptoms are oscillations of the head and body, titubation, instability, increase of the base of standing and Romberg's sign. There are often associated ocular disorders, either nystagmus or the absence of all movements of the eyeballs to rotation of the body round a vertical axis, commonly known as rotary and post-rotary nystagmus. This lack of compensatory movements of the eyes has been pointed out by Egger under the name of labyrinthine ophthalmoplegia. Staggering gait may also occur in those cases of tabes where the muscular sense is profoundly affected or where there is primary atrophy of the vestibular nerve. In Starr's case of tearing of the left auditory nerve in fracture of the base of the skull, there was a constant agonizing sense of rotation of the body on its longitudinal axis and consequently a ceaseless turning of the body in the opposite direction, in an endeavor to correct the subjective sensation.

Among recent contributions to the subject, Raymond and Egger have given us a minute study of a case called by them vestibular ataxia. After a prostrated narcolepsy, their patient perceived a loss of equilibrium in walking. There was diplopia, anæsthesia in the region of the right fifth nerve, horizontal nystagmus, tic of the right half of the face and diminution of hearing on the left. The sense of attitude was normal. There were oscillations of the body in walking, increased when the eyes were closed, and a tendency to fall to the right. The subjective sensation of rotation to the left was normal, but when suddenly stopped, there was no illusory rotation in the opposite direction. On turning to the right, there was no perception of rotation, but when the move-

ment was stopped, there was a sense of rotation to the left. The authors attribute the entire symptom-complex to a destruction of the vestibular apparatus on the right and consequently a lack of movement of the endolymph on the sensory epithelium of the ampullæ of the semi-circular canals, the termination of the vestibular nerve. In another case of Egger's published in conjunction with Lejonne, there was an injury to the left parietal region with consequent bleeding from the left ear, conjugate strabismus, headache and vertigo. The reflexes were exaggerated, Babinski's and Oppenheim's sign was absent, there was anæsthesia of the right side of the face and head, and the left pupil was larger than the right. The rotating experiments gave the following result: On rotation to the left, the subjective sensations of both motion and direction were normal, but when the movements were slowed or stopped, the patient experienced a sudden vertigo and pitched forward. During rotation in this direction, the left eye showed the compensatory movements of nystagmus in the same direction, while the right eyeball remained immobile. On the arrest of rotation to the left, the nystagmic movements of the left eye ceased, while the right eye began identical movements. The same phenomena were observed on rotation to the right. The Romberg symptom was only present if the patient stood on one leg. The gait was normal with the eyes open, but when the eyes were closed, there was a tendency to go to the left. In Ladame and Monakow's case of aneurism of the left vertebral artery, there was continual vertigo and a cerebellar gait, while the patient always fell to the left. In addition there was left abducens palsy, slight left ptosis and a narrowed left pupil, nystagmus was absent. The autopsy showed an aneurism of the left vertebral artery near its junction with the basilar. As the result of pressure, there was atrophy of the left side of the pons, cerebellum, olive and pyramids, also of the left acoustic tubercle and the fibers of the eighth nerve, while the left vestibular nerve was displaced, but without atrophy. The left dentate nucleus had nearly disappeared, while the middle cerebellar peduncle had totally necrosed.

Henschen reports two cases of what he designates as the "bulbar syndrome," and points out their close analogy to Babinski's and Nageotte's hemiasynergia and latero-pulsion. Following an injury to the head there developed in the first case, vertigo, dip-

lophia, a tendency to fall to the left, hyperæsthesia over the distribution of the right trigeminus, nystagmus, slight abducens paralysis, left hemi- and thermo-anæsthesia and a cerebellar-ataxic gait. The second case also followed a head injury and showed strabismus, diplopia, diminished pain and temperature sense on the right, and ataxia of the right leg. In both cases he looks upon the symptom complex as the result of slight hemorrhages from the injury, the lesion involving the medulla, the abducens and oculomotor nucleus, the central pain and temperature pathways and the cerebello-olivary fibers. In one of our cases of Ménière's disease, with a negative Rinné on the right, and a subjective feeling in the attacks of objects swimming in the visual field from left to right, rotation experiments to the left gave a normal reaction, but on rotating to the right, there arose a severe post-rotary vertigo and the patient was thrown violently to the left.

Among the purely bulbar disturbances of equilibrium, Bourgeois has described a case in which there was nystagmus, severe vertigo and a tendency to fall to the right. The autopsy showed a syphilitic area of softening on the right side of the medulla, beginning in the lower half of the olive and involving the nucleus ambiguus, the descending trigeminal root and the direct cerebellar tract. The auditory tracts, especially Deiter's nucleus, were intact. To this may be added Reinhold's three cases of acute softening of the medulla, destroying the restiform body and olive by a thrombus consecutive to an obstruction of the vertebral artery. Clinically the symptoms resembled those of cerebellar ataxia and Reinhold looks upon it as bulbar, conduction ataxia. In Knowlton's case of a cat with a glioma of the floor of the fourth ventricle, there was rotary nystagmus, forced movements to the left, and a tendency to left-sided rotation in a longitudinal axis. Anatomically the growth invaded the restiform body, and there was degeneration of the left cochlear nerve. In Musken's experiments on selachians, hemisection through the mesencephalon, corresponding to the corpora quadrigemina of higher vertebrates, produced circus movements towards the uninjured side, while hemisection of the medulla, proximal to the exit of the eighth nerve, caused the same movements towards the injured side. Destruction or injury to the nucleus funiculi gracilis in cats, dogs and monkeys, caused marked disturbances of gait and equilibrium. The ataxias

due to lesions of the hemispheres, occur chiefly in lesions of the basal ganglia, of the centrum semiovale, the cortex and the corona radiata. Some cases of this type have been reported (Grasset), and in only a few of these was the phenomenon of post-hemiplegic origin, in the greater part it was a true cerebral ataxia, a direct manifestation of the brain lesion. A search through the literature has failed to disclose any case resembling ours, where the central ataxia could be traced to pressure from a subdural hemorrhage, excepting perhaps in Henschen's two cases where the syndrome was ascribed to probable slight hemorrhages. The patient, G. R. H., age 42, laborer, was admitted to the Worcester Insane Hospital on July 19, 1905. The family history was negative, while the personal history disclosed nothing of importance, excepting that in early manhood, he had some trouble with his right ear, following which there had been a more or less continuous offensive discharge. In June, 1905, an examination disclosed a chronic suppurative otitis media of the right ear, some mastoid tenderness, but without any fever. A large perforation of the membrana tympani was obscured by a polypus, which was removed by snare under ether. About the middle of the month he suddenly became delirious, showed some disorientation and confusion, and about a week later there was noticed difficulty in walking. As the mental state showed no improvement, his commitment became necessary. On admission he was restless and disoriented, but showed a certain amount of insight, claiming that his head was "muddled up." He gave the date as "Oct. 21, 1895." He was unable to remain in an upright position, easily falling backwards, and in walking, he crossed one leg over the other and swayed considerably from side to side. A complete physical examination a few days later disclosed the following:

Well developed and nourished. Tongue a little coated. Tibial crests smooth. A few enlarged glands in each groin. There is no complaint of headache or vertigo and percussion of the scalp discloses no tenderness. No hemianopsia or diplopia. There is a fine horizontal nystagmus. The right pupil is slightly larger than the left, and both react rather sluggishly to light and accommodation. He is able to hear a watch tick at about 5 cm. each side, but not at all by bone conduction. Smell not impaired in either nostril. Taste impaired in the anterior portion of the

tongue. There are no disturbances of sensation and no astereognosis. Knee jerks and Achilles lively and equal. Slight ankle clonus on the left, none on the right. No Babinski. Abdominals and cremasterics absent. Tongue median but a little unsteady. Facial movements and mimic activity symmetrical. There is a coarse jerky tremor of the hands, more marked in the left and greatly increased in rotation. The grasps are rather weak. The left arm shows a marked ataxia, with the eyes both open and closed. In Romberg's position, even with the eyes open, there is a marked swaying and a tendency to fall in any direction. He is unable to stand without swaying, even with the legs widely stretched apart. He walks rapidly, bringing the heel heavily on the floor, swaying from side to side and crossing one leg in front of the other. He is unable to turn quickly without falling, and he easily falls forward in attempting to pick up an object from the floor. No ataxia of the legs as he lies in bed. He speaks rather slowly, but there is no true paralytic speech defect. The writing shows a coarse, jerky tremor, with poorly formed letters. The heart, lungs and abdomen are negative. There is a moderate grade of arterio sclerosis. The urine is free from albumen, sugar and casts. An otoscopic examination showed the left ear to be normal. In the right ear, the meatus was free, and there was no mastoid tenderness. The membrane was thickened, but not retracted, considerably reddened in the superior-posterior portion, shadows of the ossicles not visible. The two anterior quadrants are replaced by gleaming scar tissue, at the lower third of which there is seen a pin-head perforation.

July 26. The patient is restless, confused and frequently out of bed. He uses words in a peculiar twisted manner (paraphasia) and is completely disoriented. There is no asymbolia. The associations are mostly modifying. He calculates well, but the recent memory is poor.

SAMPLE OF PRODUCTION.

What day is this? "Saturday." (Wednesday.) What place is this? "Franklin, Mass." What is the building? "I think it is a——convent——no, it ain't. This is the——a hospital, that belongs to the county, I understand that it is some *institution* that belongs to the county." Why are you here? "I live in it."

July 29. The capacity for retaining recent impressions (Merkfähigkeit) is very poor, the visual memory defective, fabrications prominent. An ophthalmoscopic examination showed the fundus to be pale, the vessels thin and the discs a little hazy at the edges (beginning optic neuritis). He complains of constant vertigo and of "dark flashes" before the eyes. Tremor of both hands, more marked in the left. Incoordination of left arm on purposeful movements. Slight lateral nystagmus. The pupils react sluggishly to light, but he is able, however, to read small newspaper print without difficulty. The gait is uncertain; he staggers like a drunken man, crossing the legs, and shows a strong tendency to go to the left, but without any balancing movements of the arms. There is no paralexia, but he can retain but little of what he reads, and fabricates when urged to repeat. Asked to draw a triangle from memory, he produces a circle. For a star, he makes a confused jumble of lines, but he readily recognizes and correctly names a triangle and circle when shown them. He describes familiar objects (American flag, automobile, cow) in a fairly accurate manner.

July 31. There is an aimless, psycho-motor restlessness, he is frequently out of bed, and on account of the uncertain gait, he has sustained a number of ecchymoses and superficial bruises. The knee jerks are exaggerated and the pupils rigid; occasionally there is a well-marked tic of the left side of the face. There is a constant complaint of vertigo, and, in writing, he attempts to write over the edge of the paper, as if suffering from diplopia. He is able to use ordinary objects correctly. Facetiousness and punning are quite prominent (Witzeisucht). There is complete disorientation for time, place and person; he gives the place as "a hospital in Norfolk," the date as "November, 1887," is 40 years old" and "born in 1863." The specific memory is very poor, but there is no retrograde amnesia. The grasp on current events is practically negative. There is some asymbolia and disturbance of apperception in naming pictures; he calls a bird "a kangaroo," a light-house "pillars of a bridge." Isolated letters and simple geometrical figures are named correctly. Copying of print shows marked confusion and paragraphia.

August 1. No loss of the muscular sense of position of either the upper or lower extremities. In the rotation experiments

(with the eyes bandaged) he is able to appreciate the direction (right or left) in which he is turned, and on sudden cessation of the motion, there follows the normal post-rotary vertigo. On rotating the patient to the right with the eyes open there is no nystagmus during rotation, and no post-rotary nystagmus in sudden cessation. When he is rotated to the left, there is likewise no nystagmus during rotation, but the post-rotary nystagmus becomes marked in both amplitude and intensity, in a horizontal plane, on sudden cessation of the motion. During rotation, he inclines the head either to the right or left, corresponding to the direction in which he is turned.

August 3. The patient continues deeply disoriented, with utter loss of appreciation of the time sense. No complaint of tinnitus, vertigo or nausea. Visual memory very poor; no diplopia, asymbolia or astereognosis. The right arm shows marked incoordination and ataxia, and some intention tremor, with the eyes either open or closed.

August 4. In wrinkling the forehead, the folds are deeper on the right. He is able to stand up with the legs stretched wide apart; in walking, there is the same loss of equilibrium, he keeps the legs apart, sways considerably, crosses the legs in forward propulsion as formerly and makes many balancing movements with the arms. Frequently, he is almost propelled or forced backwards; at other times there are forced rotating movements of the entire body to the left. There is a constant complaint of "seasickness."

August 8. The aimless restlessness continues, but the patient is decidedly more stupid. He is confused, disoriented, fabricates and shows an occupation delirium. There have been three moderate attacks of hiccough to-day. The subjective complaint of vertigo is constant. No tenderness over mastoid processes. Knee jerks exaggerated. On converging the eyes for near accommodation, or on extreme rotation of the eyes to the left, there develops a moderate horizontal nystagmus. Ptosis of both upper lids, more marked on the right. The right pupil is larger than the left. The left arm shows the same incoordination and ataxia on active movements, and in attempting to use a pencil, he merely makes stabbing motions with the point. The speech is "thick," but without tremor of the voice, lips, or facial muscles. In pro-

nouncing test words, he omits syllables, but there is no true paralytic speech defect. The tic of the left side of the face is almost constant.

August 22. There has been no change in the patient's condition since the last note, with the exception of some increased difficulty in swallowing. To-day he is semi-conscious with marked double ptosis and tremor of the entire right arm. He can move the eyeballs but slightly. Knee jerks increased; slight double ankle clonus, plantar reflex normal on the left, Babinski on the right; double Oppenheim reflex; cremasteric and abdominal reflexes absent. During the next week, there was slight improvement in the general condition, but on August 31, there was a recurrence of the stupor with fever and double ptosis. There was great difficulty in swallowing, and he breathed noisily like a person under ether anæsthesia, with periods of apnoea without cyanosis, lasting from 20 to 45 seconds. He gradually failed with increased frequency of the stupor and died September 15, 1905, of lobar pneumonia.

Autopsy 45 minutes after death (Dr. T. A. Hoch) (only the findings in the nervous system are given). Both the middle and internal ears present an absolutely normal appearance. The inner table of the calvarium is granular and eroded, especially in the left parietal region. Macroscopically the cord appears normal. Brain, 1220 grams. Dura thick and opaque, not adherent to the skull cap. Over the right hemisphere there is a large subdural hemorrhage, which flattens this hemisphere to about one-half the thickness of the left. The hemorrhage is firmly adherent to the dura and has a thick, greenish film near the pia. Between these two layers there is a large fluid cyst, which contains considerable fluid blood and a red clot mixed with fibrin. Over the left hemisphere posteriorly, there is a partially organized clot about the size of a silver dollar. No milkiess of the pia. The convolutions of the right hemisphere are much flattened, as the result of pressure. The pons a little soft, the cerebellum and temporal lobes firm. The fourth ventricle is free from granulations. Serial sections of the cerebrum, pons, mid-brain, and cerebellum, showed absolutely no lesions. There was no dilatation of the ventricles and no punctiform hemorrhages in the central gray matter.

Microscopic examination. Left *para-central lobule* (Nissl stain). Orientation of cells normal. No increase of neuroglia nuclei. Vessel walls of normal thickness, no plasma or rod cells. The large and small pyramidal cells show moderate pigmentation and a moderate degree of acute alteration. A few of the small pyramids are in a state of beginning central chromatolysis. The right *paracentral lobule*, the first right frontal convolution show the same cell changes; likewise the *medulla* and the *cord*, especially in the anterior horn cells. The columns of Goll and Burdach are intact; there is no disappearance of the myelin sheaths and no neuroglia increase.

The anatomy of the central pathways concerned in equilibrium, together with the physiological and hydrodynamical interpretations of symptomatology, offers a far more complex problem than any clinical observation or post-mortem findings. It would comprise the anatomy of the complex vestibular nerve, of the central connections of the cerebellum and the restiform bodies and the relation of these to the oculo-motor nuclei, it would lead us into certain developmental and morphological theories of vertebrate equilibrium and still further into hydrodynamics and philosophical discussions of what constitutes space. As a digression of this sort would exceed the scope and purpose of this paper, I shall content myself by very briefly summarizing the most important points along these lines.

The dendrites of the vestibular nerve come from the ampullæ of the semicircular canals and the utricle of the labyrinth. Part of their axones pass to a group of nuclei in the pons and from there, they have numerous connections with the cerebellum, oculomotor nuclei, tegmentum, olivary bodies, corpus trapezoidum, corpora quadrigemina, geniculate bodies, optic thalami, and through the *formatio reticularis* with the motor nuclei of the cervical nerves in the cord. Anton, Zingerle, and Mott, locate in the frontal lobe the seat where impressions are conveyed by the semicircular canals, whereby orientation in the three dimensions of space is affected, while Mills places the pallial vestibular representation of equilibrium, perception and orientation, in the second and third temporal gyri. Although there seems to exist no special cerebral center for equilibrium and orientation, yet we see how widespread are the central connections of the vestibular

nerve. Therefore, it is easy to conceive how pressure of a subdural hemorrhage in a case like ours, should so affect those central pathways of the brain that are connected with the vestibular nerve, that disturbances of equilibrium and co-ordination could arise purely as a pressure symptom. This was of the cerebellar-vestibular type, in the sense of a combined symptom of both a cerebellar and a vestibular lesion. The term central ataxia is to be preferred as less unwieldy and more localizing. The symptom-complex I have never seen in any other case of subdural hemorrhage, but in the end stages of general paralysis and senile melancholia, there is often a certain amount of motor inco-ordination apart from any special weakness or disturbance of sensation and due rather to a primary degeneration of certain motor fibers.

BIBLIOGRAPHY.

L. F. Barker.—A Description of the Brains and Spinal Cords of Two Brothers Dead of Hereditary Ataxia. Decennial Publications of the University of Chicago, 1903.

Bourgeois.—On the Diagnosis of Bulbar Disturbances of Equilibrium. Trans. 7th Intern. Otological Congress. Bourdeaux, 1904. (Abst. in Archives of Otology, August, 1905.)

J. Déjerine.—Sémiologie du Système Nerveux. P. 645.

L. V. Frankl-Hochwart.—Die Ménière'sche Symptomen-Complex, 1895.

J. Grasset.—Les Maladies de l'Orientation et de l'Equilibre.

S. E. Henchen.—Zum bulbaren Syndrom; Dissoziation der Sinne in Verbindung mit cerebellar-ataktischen Störungen. Neurol-Centralblatt. June 1, 1906.

F. P. Knowlton.—A Case of Tumor of the Fourth Ventricle with Cerebellar Symptoms in a Cat. Am. Journ. Physiol. Feb., 1905.

Ladame and Monakow.—Aneurysme de l'Artere Vertébrale Gauche. Nouvelle Icon. de la Salp. XIII, 1900.

P. Lejonne and M. Egger.—Traumatisme Cranien. Syndrome Vestibulaire. Accidents Meninges. cerebro-spinaux. Rev. Neurol. May 30, 1906.

L. J. J. Muskens.—Studies in the Maintenance of the Equilibrium of Motion and its Disturbances, so-called "Forced Movements." Journ. Physiol., XXXI, 1904.

F. Raymond and M. Egger.—Un Cas d'Ataxie Vestibulaire. Rev. Neurol. June 30, 1905.

O. Rosenbach.—Die Seekrankheit. 1896.

D. H. Reinhold.—Beiträge zur Pathologie der acuten Erweichungen der Pons und der Oblongata. Deut. Zeit. f. Nervenheilkunde. Bd. V, 1894.

M. A. Starr.—Organic Nervous Diseases. 1905.

Verger.—Arch. General de Medecine. Nov. Dec., 1900.

DISCUSSION.

DR. HUGHES.—It is very interesting to read so complete a record as this, showing the invasion of the cerebellum from the vestibular area, and the thing we are now endeavoring to discover by pathological demonstration is the seat of equilibration. While this paper was being read several cases of cerebellar lesion came to my mind, and one on which I made autopsy. I recall one which involved only the dentate area. Three nuclei involved that portion of the cerebrum, three tumors, which had evidently been the result of precedent malarial hyperemia. The patient came from a noxiously malarial district of Illinois. One tumor had reorganized; another became encysted and semi-fluid, and the third was also encapsuled fluid. The patient died from invasion of the fourth ventricle, retaining all his faculties until the day before he died. He improved in his walk, walking no longer in a circle, and could ride out alone in street cars. His pressure symptoms disappeared under the use of bromide of sodium, tonics, and chologogues.

It was a surprise to me that the symptoms disappeared under treatment, and his wife concluded he would recover. I assured her it was not probable, but she took him home, in a few days brought him back, and he died the following night. This case showed that you can have a cerebellar lesion, just as you can have a lesion involving the cerebrum, and yet have the faculties retained with power of locomotion.

We are still in doubt as to the precise location of the center of equilibration in the cerebellum. Papers like this are very interesting. Some day we may know precisely where that *terra incognita*—the balancing center of the cerebellum, actually is.

CEREBRAL ARTERIOSCLEROSIS.

THE IMPORTANCE OF ITS STUDY TO THE PRACTITIONER OF MEDICINE.

By DR. JAMES B. AYER,
Boston, Mass.

Of late the medical journals are crowded with articles upon Arteriosclerosis. It is evident that the value of its study is rapidly being grasped. It is considered from every point of view.

I wish to say a few words as to the value of understanding the conception of arteriosclerosis to the medical profession. My remarks *bear entirely upon the practical side.*

Many years ago an estimable patient of eighty years bluntly interrupted me, while investigating his case, with the exclamation: "Doctor, I see that you do not entirely understand old people!"

He proved that elderly patients have a wonderful insight and can tell whether their physician is as much interested in "wear and tear" and in the "breaking down of the human frame" as in the symptoms of acute diseases of youth and middle age.

Certainly senile disease and the patching up of the old machinery have *not* been attractive to medical men in times past.

I claim that they should be studied as much as acute diseases, and that they cannot be understood without fully comprehending that *arteriosclerosis is a general vascular disease of the whole system.*

As is often reiterated, "The key to the understanding of senile disease lies in the mastery of the epoch-making communications of Gull and Sutton upon 'arterio-capillary fibrosis,' as they called the wear and tear of the whole system. Bright had observed interstitial disease of kidneys and the heart, but Gull and Sutton had pointed out that he had 'forgotten the man between,' and that the *whole system* was necessarily involved in the 'wear and tear.'"

Although this new idea was given out in 1872, it was *not*

generally accepted. In the edition of Flint, of 1877, the subject is discussed in a few lines in which it is stated that Gull and Sutton had gone too far. Slowly, however, as the conception of Gull and Sutton gained way—the text books began to take it up and discuss the subject from the practical as well as the scientific side, till now the summing up of Dr. Alfred Stengel (American Medicine, February 10, 1906) is forced upon all who have seriously considered the subject, viz.:

“The importance of arteriosclerosis as a generalized disorder is clinically of the greatest practical value.”

Requiring a long and intimate acquaintance with the patient the subject is peculiarly the study of physicians connected with chronic hospitals and asylums. It is also the specialty of every practitioner of long standing who, with this now accepted chart, studies his patients, as they begin to show signs of wear and tear.

CLINICAL EXPERIENCE.

ORGANS AFFECTED IN ARTERIOSCLEROSIS.

I—Brain:

- Pipe-stem all degrees;
- (a) Apoplexy—giving way;
- (b) circuit cut;
- (c) irregular circulation

Consequences:

- (a) paralysis;
- (b) aphasia, etc.;
- (c) *wandering*.

Light symptoms:

- vertigo;
- poor memory;
- irritability;
- slight unconscious attacks;
- delirium of illness;
- delirium of convalescence.

II—Heart:

- Myocarditis;
- diseased and leaky valves;
- angina pectoris.

First symptoms, throbbing; palpitation.

III—Kidney:

IV—Digestive Organs.

In reviewing his cases I think one will be surprised to find how often there has been, for a year or more, some throbbing, slight dyspnoea on going up stairs, or a feeling that it is not wise to run for a train.

If the physician listens to the heart at the time, there is often present accentuation of the aortic sound, and the symptoms of high tension of the pulse must be carefully studied. There may be arrhythmia.

During the last few months there is beginning to be discussion about the *preliminary stage*. If arteriosclerosis is divided into three stages, can one give a distinct, clear-cut description of the early, first stage?

Rapidly as our knowledge is advancing, and clearer and clearer as the disease stands out, I do not yet feel that the *first stage* can be well defined in the majority of cases.

One thing that does impress me is that the cardiac symptoms frequently come to a standstill—often in time losing their comparative importance.

With a representation of *cardiac circulation connected with the cerebral*, we get a broad and actual view of the situation—for nothing stands out more clearly than the fact that cerebral arteriosclerosis is only a part of a general arteriosclerosis. *One ought not to look at it as a distinct affection.*

It seems to me that a colored drawing by Mr. H. F. Aitken, such as I pass around (to which arteriosclerotic patches may be added when we get sufficient statistics), will be invaluable in impressing upon our minds *the intimate connection of the whole vascular system in arteriosclerosis.*

Certainly the Circle of Willis, the large vessels from the heart, and the coronary arteries have the most intimate relation to each other in this respect, and this fact stands out at a glance.

It would be well to have another chart made adding the arteriosclerotic patches of other organs, especially of the kidney.

Mr. Aitken, at my suggestion, has also made a series of *studies* shown this week in the exhibition for this society at the Harvard Medical School, illustrating arteriosclerotic brain conditions for which we are indebted to the Pathological Laboratories of the Massachusetts General Hospital and the City Hospital.

A faithful effort has been made to sketch the specimens *in an*

exact manner and to dissect the arteries with *minute care*, believing that in illustration of a goodly number of cases (with some knowledge of their clinical history) we will be better aided than in any other way to understand cerebral arteriosclerotic symptoms.

The variety and irregularities of the arteries making up the Circle of Willis, their great diversity, and changes due to arteriosclerotic patches are suggested in these drawings.

The *circuit cutting, irregular circulation and giving way* due to arteriosclerotic changes, especially by narrowing the caliber of the pipe-stem arteries, in short, the variety of ways these patches interfere with the circulation, causing *paralysis, aphasia and wandering*, and the milder degrees of *dizziness, vertigo* and *slight unconscious attacks*, are better understood by studying even this small collection.

The influence of thrombi in narrowing and occluding the vessels is not borne upon sufficiently in these few pictures. Nor was there room for the important study of minute cerebral aneurisms.

Nor do the specimens throw light especially upon the influence of toxicity of the blood from disease, but I would particularly like drawings which might help us to decide a differential diagnosis between arteriosclerotic conditions and anæmia as age alone does not determine the diagnosis.

If it were not framed with the others I would like to pass around one of Mr. Aitken's sketches showing the extent to which one of the striate arteries was found to curve. I have not yet been able to learn whether cerebral arteries winding to this extent may be considered normal or abnormal. This single winding striate artery proved as much of an incentive to make these studies as any of the specimens of arteriosclerotic changes found.

The prognosis cannot be understood without a thorough acquaintance with the fact that *arteriosclerosis is a general vascular disease*.

I can illustrate this abundantly from my records of old people. Six years ago an elderly patient developed arrhythmia which has continued since and is now clearly seen to be one of the earlier symptoms of arteriosclerosis.

At first his friends went with him, by my advice, when he went

away traveling; but in a couple of years he took advantage of my going away and began to go by himself and climb hills in the White Mountain district. While the irregularity of the heart continues unchanged he is to-day in better condition than the average man of the age of eighty.

For kidney symptoms the albumin and casts have repeatedly suggested an unfavorable prognosis until, in time, the fact was recognized that the interstitial nephritis connected with general arteriosclerosis does not advance to any extent in many cases *when the patient is placed under good conditions.*

As for cerebral arteriosclerotic symptoms, I feel that *giddiness* and *vertigo* stand out prominently as particularly puzzling symptoms. *They are the baffling symptoms.*

I recall in illustration, a patient then aged about seventy-five who, six years ago became so possessed with vertigo (a sea-sick feeling) when she suddenly changed her position, especially when taking articles down from a high shelf, or when she began a meal that she had to lie down; in short, whenever there was a quick disturbance of the circulation of the brain, the symptoms of vertigo were so marked that she caused me a great deal of thought and care until I had studied and understood her.

These symptoms disappeared in a few years, but have been intermittent since. She is, however, now a very active house-keeper, commencing her duties early each morning.

It is unnecessary to multiply cases illustrating the importance of waiting months or years if necessary, until symptoms—often alarming—of heart, kidney or brain have been carefully watched long enough to determine whether they belong to *general arteriosclerosis* or are only of local origin.

We all learn by experience how baffling are the cerebral arteriosclerotic symptoms showing themselves by the varieties of vertigo, and how much patients improve under good conditions. Even arteriosclerotic epileptiform attacks have less effect upon the patient's mental condition than would be expected. How much we wish to know the condition of the cerebral circulation in these cases.

This optimism and fortunate prognosis depends upon placing the elderly patient under good conditions, upon relief from worry

and care, upon producing ease of mind by travel, agreeable occupation, and by fads.

I will end as I began by a quotation from an elderly patient to show that we must use tact and not insist upon ideal treatment against our patient's wish.

In trying to influence a patient, this week, to go to the hospital for a few days, to be under observation—telling him that this was the safe course to take, he said, "Doctor, I will go if I get decidedly worse, but I feel that a man who is nearly 78 years of age has earned a right to take some risks and decide for himself."

In this short paper I must apologize to the members of this society for having told them nothing new.

I hope, however, that a brief resumé of one's convictions of the importance of a practical use of the modern method of classifying arteriosclerosis and of studying the arteries, and of optimism with regard to the benefit of the extensive study now being made of the subject may be worth expressing here.

FURTHER EXPERIENCE IN FAMILY CARE OF THE INSANE IN MASSACHUSETTS.

By OWEN COPP, M. D.,

Executive Officer, State Board of Insanity, Boston, Mass.

An experience of twenty years in family care of the insane in Massachusetts has just closed. Its teaching is a hopeful augury of the future rather than a record of great achievement. The course of progress has been uneven, beset with difficulties and impeded by the inevitable struggles of a new movement.

Inspired by the example and notable success of the system in Scotland and Europe, Mr. Frank B. Sanborn, Dr. Henry R. Stedman and others made Massachusetts the pioneer of its introduction to this country. Although other States have watched the experiment with quickening interest, Massachusetts still remains its solitary representative here—disappointing, yet, on reflection, not very surprising.

Long before its inception the public had been familiar with another and far different form of community care of the poor and insane. The picture of their distress in poorhouses and shiftless families, as drawn by Miss Dix, in her memorials to State Legislatures, was still vivid in its memory. Even to-day some recall their youthful impressions of the wretchedness of the worthy poor farmed out to the lowest bidder, and the forlornness of the orphan child, underfed, overworked, *in* but not *of* the family of its task-master. Naturally in the minds of such was aroused suspicion of mercenary and sinister motives in those willing to receive the insane under the new regime, whose beneficent spirit, appearing in the similitude of the old, could be revealed only by lapse of time. Then there was the unreasoning fear, always prevalent in the community, lest the insane commit some violent act or exert a degrading influence on associates. Their friends also were not always willing to take the risk of renewing old troubles and annoyances against which the institution offered the surer safeguard.

In the endeavor to correct primitive abuses and allay popular apprehension a strong sentiment had been created in favor of institutional care, as the best refuge of the insane and the securest protection of the public, and the current had set strongly in that direction and has continued with accelerating velocity ever since. Accordingly the new order seemed to ignore lessons of the past, and to be a retrogression foredoomed to failure.

Headway against these adverse undercurrents might have been faster had a positive desideratum been obvious, such as the pecuniary saving to the Scotch ratepayer, who is assured a marked reduction in the cost of support of every patient removed from asylum to private family, amounting on the average to about forty per cent. Although such incentive was and is operative in Massachusetts, as will be shown, it did not originally directly touch the parties in control, and was not easily demonstrable until results became apparent.

Prior to inauguration of State care of the insane in 1904, local overseers of the poor determined the disposition of a majority of patients suitable to leave the asylums but destitute of friends. Unless the board rate in the family were less than in the institution, as rarely happened, they saw no advantage in the change, inasmuch as resulting relief to overcrowding and release of space in asylums were benefits accruing, not to them directly but to the Commonwealth; or they would insist, especially in the smaller municipalities, upon the removal of such patients to the cheaper care of the local almshouse. Gradually, however, as they perceived that the initial board rate in a family might be reduced even to self-support, with increasing usefulness of the patient, their cooperation was more readily enlisted, but their initiative never incited.

The institutional effect of family care does not appeal to self-interest. To be sure, boarding out a patient removes immediately or remotely a floor bed from crowded halls or corridors, but the coincident loss of a comfortable, perhaps helpful inmate, dampens the ardor of active promotion of the cause; while the altruism stimulating to discharge of every patient whose happiness, welfare or mental state may allow, easily lies dormant in the busy preoccupation of the medical staff in other more pressing duties.

Nevertheless, it is a pleasure to testify to the self-effacement and growing interest in this work among our hospital physicians.

In the last analysis it appears that the State has the only direct and paramount incentive to forward this movement, because it facilitates discharge of patients, tends to prolong their stay outside, reduces the amount of public provision necessary for their care, and does not increase the cost of their maintenance.

These advantages, however, have not always been so clearly manifest as to command aggressive, sustained and organized support.

In spite of these deterrents, considerable advance has been made and foundations laid for better work. A review of the twenty years shows that prejudice against family care of the insane has been dissipated wherever personal contact and knowledge have superseded theoretical preconceptions; that early abuses have been eliminated by seeking the welfare of the patient rather than relief of the public treasury, by insisting upon the suitability of families and careful selection of patients with a view to mutual compatibility and the exclusion of morbid characteristics reacting injuriously on associates, by avoiding in the families conditions of poverty so necessitous as to induce undue tolerance of vicious eccentricities of patients, leading to friction and discord, forerunners of ill treatment, by rejecting proposals to make special provision to engage in the work as a vocation and choosing families established in their homes and needing only supplementary incomes, and, finally, by unremitting supervision, alert to detect evidence of neglect, overwork and the like, and quick to respond to discontent or unhappiness of patients by transfer.

Human judgment and foresight have never been complete safeguards against violence, self-injury, sexual accidents and lesser mishaps in dealing with the insane, either within or without the institution. The public safety cannot be absolutely insured against them, because insanity develops in the community before admission to the hospital and continues in many cases after discharge. Here, as in determining the suitability of patients for family care, judgment enters as a necessary factor, and equal precaution against error should be taken. The element of risk is the same in either case, and must be justifiable unless perpetual detention be the inevitable lot of the unrecovered insane.

In the twenty years 762 different patients, chiefly women, have lived in 465 families without doing a serious act of violence and rarely attempting any. At the very outset one man, suffering from recurrent insanity, hung himself within twenty-four hours after leaving the hospital. During the succeeding period of nearly twenty years the record was clean, until May of this year, when an invalid, hypochondriacal woman took her life in the same manner. She had been in four families for four and a half years. No caretaker had ever regarded her as insane. I should have hesitated to commit her as such, and would have discharged her long ago had any other place than the almshouse been open to her. The propriety of caring for her in a family could not be doubted, and the suicidal act seems to have been wholly unforeseeable. The only pregnancy occurred twelve years ago in a girl of sixteen, recovering apparently from an acute attack of insanity after boarding three years in a family. She was not feeble-minded, and would properly have been allowed to go home if conditions had been favorable.

On the other hand, patients have been almost universally acceptable to caretakers and their neighbors. Many reveal to them no symptom of insanity, although they are usually described as "peculiar." Complaint in any form has been remarkably infrequent. Caretakers have rarely tired of their duties and have not manifested deterioration, moral or otherwise, from their performance. They seem rather to have been spurred to their best endeavor by their responsibilities and the constant visitation of inspectors, not only in keeping up the standard of care of their patients but in improving their homes and surroundings. Generally they have become interested in their wards and sometimes self-sacrificing in befriending them. The process of sifting the good from the bad must be unceasing, but I am satisfied that worthy motives greatly predominate. The community aspect of family care of the insane may be made as benign as any other method and should command cordial approval.

The statistical showing of the last four years is not essentially different in character but more favorable in numerical results than that of the previous sixteen years, as presented to the association at its meeting in 1902 in my paper on "Some Results and Possibilities in Family Care of the Insane in Massachusetts."

In that year 42 patients were placed in families; in 1903, 78; in 1904, 94; in 1905, 104, a total of 318 in four years. Their number in families rose from 117 to 253, or 116 per cent. One hundred and eighty-eight new families applied for patients; 132 were approved, 122 received patients. The prediction made four years ago that demand for patients would grow with our ability to satisfy it has been amply fulfilled. There has been no lack of good families without special effort to secure them.

The average weekly per capita cost of support in families, exclusive of supervision, was \$3.02, being 11 cents or 3.51 per cent less than during the previous sixteen years. The average weekly per capita cost of supervision was 42 cents, being 12 cents, 40 per cent more than previously, owing to greater frequency of visitation and general thoroughness of oversight. The comparative details as to expenditures in different periods are tabulated thus:

Periods.	Average Number Public Charges.	Weekly Per Capita Cost.						
		Public Charges.						Public Charges and For- mer Public Charges, Whole Cost of Support.
		Board (Including Or- dinary Clothing.)	Extra Clothing.	Medical Attendance, Nursing, Burial Expenses, etc.	Whole Cost (Exclu- sive of Supervision.)	Supervision (Includ- ing Salaries and Traveling Expenses)	Whole Cost of Sup- port.	
Average 20 years, 1886-1905..	122	\$3.07	....	....	\$3.11	\$0.32	\$3.43	..
Year ending Sept. 30, 1902..	102	3.03	\$0.01	\$0.06	3.10	.35	3.45	..
" " " " 1903..	129	2.98	.02	.03	3.03	.42	3.45	\$3.29
" " " " 1904..	158	2.90	.04	.02	2.96	.49	3.45	3.19
" " " " 1905..	186	2.92	.02	.04	2.98	.42	3.40	3.11
Average 4 years, 1902-1905..	144	2.96	.02	.04	3.02	.42	3.44	*3.20
Average 16 years, 1886-1901.	116	3.10	.01	.02	3.13	.30	3.43	....
Difference.....	....	.14	.01	.02	.11	.12	.01	....

*For three years.

As thus appears, the whole cost in families during the last four years averaged \$3.44 a week for a boarder continuing to be a public charge, or \$3.20 including former public charges still boarding but without public expense.

Contrasting the whole cost of support in institutions with

that in families for last year (1905), it is found that the interest charge on investment in institutional plants averaged 57 cents a week (an underestimate), depreciation charges based on actual expenditures for repairs and improvements, 90 cents, net running expenses exclusive of any depreciation charge, \$3.45, aggregating \$4.92 as the average weekly per capita cost in institutions; compared with \$3.40 in private families for public charges alone, or \$3.11 including former public charges still boarding but without public aid. After making due allowance in favor of hospitals and asylums for their more difficult classes of patients and greater expense for attendance and medical treatment, the conclusion may be fairly drawn, in my opinion, that family care is not more expensive than institutional care of a like class of patients.

The pecuniary incentive to family care arises from its efficiency in promoting self-support and relief from public aid, whose benefits may be justly claimed because boarding out is the last resort, as a rule, in effecting discharge, without which permanent retention in an institution would be probable. Such probability is confirmed by the length of previous hospital residence. One hundred and seventy, 65 per cent, of the patients placed in families during the last four years had been so resident two years or more; 109, 42 per cent, five years or more; 55, 21 per cent, ten years or more; 29, 11 per cent, fifteen years or more; 11, 4 per cent, twenty years or more; 6, 2 per cent, twenty-five years or more.

During the twenty years 160 boarders passed out of public support, of whom 97, 61 per cent, had been in hospitals and asylums two years or more; 45, 28 per cent, five years or more; 17, 11 per cent, ten years or more; 7, 4 per cent, fifteen years or more; 4, 2 per cent, twenty years or more, and one twenty-six years.

Furthermore, the study of the individual histories of these patients shows that such credit is due family care in the case of at least 112, 70 per cent.

Assuming then the essential validity of the claim, what has been accomplished in this direction?

Seven hundred and sixty-two patients have been boarded out, of whom 160, 21 per cent, passed out of public support. Of

these 117, 73 per cent, have not reappeared to date, after an average interval of 10 years, 10 months. Nineteen relapsed within a year; 9 in one to two years; 9, two to five; 2, five to ten; 3, ten to fifteen; 1, sixteen years, the average duration before relapse being 2 years, 8 months.

In 1902, 10 patients passed out of public support; in 1903, 5; in 1904, 11; in 1905, 19; in the first eight months of the present year, 17, giving promise of future increase.

The average period of relief from public support of these 160 patients is 8.63 years, during which their maintenance at the average rate (\$3.43 a week) in family care would have amounted to nearly a quarter million dollars. A liberal deduction for deaths and operation of other agencies leaves a substantial saving due to family care alone.

No account is taken in this computation of certain discharges to friends without boarding, but in consequence of the investigations pursued in this work, nor of prospective continuance of self-support of the many recent cases.

The rapidity of accumulation of the insane under public care challenges world-wide attention and concern. During the last quarter of a century the rate (180.16 per cent) in Massachusetts has been 2.63 times the growth (68.45 per cent) of the general population, averaging a visible annual increase of 261.16, necessitating the erection of a million-dollar hospital about every four years. The expense of their maintenance last year in Massachusetts was \$1,720,736, 3.7 times that of twenty-five years ago. The growing magnitude of such expenditures is a menace to their interests. Its reduction to a minimum is urgent, to lessen the danger of centralization, on the ground that large business operations require the application of this principle, to preserve the individuality of each hospital, and its power to raise and maintain the standard of treatment and scientific attainment, and keep the hospital idea ascendant over that of mere care and housing.

The rate of accumulation of the insane greatly exaggerates the real increase of insanity. During the last twenty-five years in this State the average annual increment of the admission rate has been 69.52, while the accumulation rate has been 261.16, 3.75

times as great, showing the inflow to have been a far lesser factor than the sluggish outflow.

This strengthens the belief that causes of accumulation in institutions are not altogether grounded in necessity because of insanity, but are oftentimes incidental to it and removable by appropriate effort. Such effort is the peculiar province of family care. Its chief aim relates to patients who are indigent and friendless, or have friends who are impotent by reason of poverty, timid because of unhappy experiences, indifferent, perhaps obstructive, through selfishness or self-interest. To such patients the outlook discovers nothing beyond the unending routine and monotony of asylum existence unjustified by unavoidable need. Sometimes they have become habituated to these conditions, gradually losing self-reliance and growing contented, even happy; or, fitting into useful places in the various departments, are amply earning their support and the many comforts and kindnesses accorded them. These types stay unless extraneous forces intervene.

Family care forms the nucleus about which these forces may gather adequate and stable organization and equipment, whence develop experienced and efficient agents whose primary purpose keeps them alert to discover opportunity for service and resourceful and persistent in rendering it. Obstacles gradually disappear through the educative influence of these patients in many families scattered over the State and brought into contact with many more neighbors and acquaintances, who become familiar with the more benign characteristics of the insane and learn to discriminate between the harmless and dangerous classes. Blind prejudice against every person who has been an inmate of an asylum, which blocks every avenue to employment and renewal of foothold in life, vanishes under this enlightenment. Capacity for usefulness is demonstrated by willing industry, harmlessness by good conduct, until confidence is won and opportunity for self-help opens again. Timid friends are reassured by their tractability in other homes, interest revives, opposition weakens, and the old home receives them back. Sometimes a bad home environment, which has repeatedly caused relapse, is replaced by a good one. The humane methods of dealing with the insane become better known to the public. The village physician who

attends these patients grows conversant with many phases of insanity and more competent to treat mental disease at home.

The friends of such unfortunates often seek our advice and help in selecting families for their care, thus averting or delaying commitment as insane.

Some 260 patients (inclusive of patients placed by trustees) are now living in 130 families in 56 towns in this State, who would otherwise be inmates of institutions. Their annual increase during the last three years has been more than 12 per cent of the average requirement for provision in new buildings.

There is indubitable proof that family care creates tolerance of the insane by the public, facilitates their discharge from institutions, aids them in regaining and holding a foothold in the community and may be made a potent factor in diminishing the accumulation rate.

Aside from other considerations, are the results of family care beneficial to the patients themselves? Their contentment and happiness in families and grateful expressions of appreciation bear witness in the affirmative. It is true that some are indifferent or equally contented in asylums and sometimes are earning their living there. Should such be disturbed, might they not go out to early relapse, an outcome not only futile but harmful? Would not the value of their labor be lost to the Commonwealth? After all would it not be as well or better to allow all unrecovered patients to remain in institutions unless occasion for removal should arise *spontaneously*? These are pertinent questions and may excite difference of opinion, but according to such a theory how many patients would leave our asylums? What other classes than the quiet, comfortable, harmless, capable patients may *properly* do so? Is there not pressing need of systematic, intelligent, persistent, resourceful endeavor against the almost irresistible drift toward them, and the clogs which choke their outlets? Otherwise, how limitless would be the accumulation!

Our fears for the patient's welfare may be dismissed. The indifferent renew their interest in affairs; their faculties are quickened and their capacity for usefulness enlarged. The worker almost invariably wins self-support or more; their success is a continual surprise. Under favorable conditions and with the

aid afforded by this system, their facility in doing for themselves, even when others have failed to help them, is remarkable. The permanence of their improvement is enlightening as to the liability to relapse. The change from hospital to family is rarely a disturbing element. Of 225 patients placed for the first time in families only 32, 14 per cent, failed, their failure being seldom due to relapse, but to error of judgment in selection. In twenty years, more than one out of every five has passed out of public support, 14, 9 per cent, becoming private patients; 55, 34 per cent, going to their friends without public aid; 91, 57 per cent, taking their places in the community. Nearly three out of every four of these have not relapsed to date, after an average period of ten years and ten months. The patients, who have relapsed held their own for an average period of 2 years, 8 months.

While I am second to none in recognition of the beneficence of institutions in their ministrations to those in need, and hold firmly the belief that our attitude toward them should be sympathetic, promotive of instant reception of every suitable patient, insistent upon thorough examination and full treatment, and zealous in defence of the public safety and welfare, I am convinced that the bounds of their usefulness may be set within these limits, and that imperative duty requires, not merely acquiescence, but *insistence*, that every patient whose mental or other infirmity does not necessitate detention shall have his chance to regain and maintain his place in life under the most favorable conditions, with such assistance as family care and "after care" may afford, and that failure shall be accepted only after actual trial and defeat.

Objection may be made that the pursuit of such a policy would strip the institutions of quiet, comfortable and working patients, leaving the troublesome, turbulent and helpless, thereby rendering their care more expensive to the State, owing to the necessity of replacing unpaid by paid labor and doing a larger amount of work proportionate to the greater degree of helplessness and intractability of residual classes. Even so, its continuance would be justifiable if benefit would accrue to those suitable for dismissal, inasmuch as the institution is not an end in itself, but exists only to meet the needs of its beneficiaries not otherwise better met.

It has been my duty for some years to transfer bad patients from hospitals to asylums. Most of the hospitals have such relief constantly; a few rarely, yet the latter do not seem to me to have a higher average of bad patients. My conviction is positive that this relief is very temporary; that bad patients are constantly becoming good, and *vice versa*, and above all that the quality of hospital work is not improved by evading rather than surmounting difficulties. Waiving this point, however, each of us has probably been obliged to withdraw working patients from a ward to the limit of despair, even revolt of nurses. Who ever knew them to fail in developing others with celerity? What sharper spur than self-interest can be found, either to stimulate their efficiency or divert their attention to the unobtrusive patients, whose vacant and listless minds vegetate without interruption but may be quickened to activity under persuasion to service, which brings them into importance and assures them of kind and privileged treatment?

Available capacity of patients for work is quite fully utilized, as a rule, but the possibilities of development in this direction have not approached exhaustion in any institution within my acquaintance, if the methods of training the feeble-minded were applied thoroughly to the regeneration of the torpid and damaged faculties of the chronic insane—a labor rich in blessing to them and amply compensating special expenditure of money and energy in the value of products and improvement of workers.

The board rate is low, averaging last year \$2.92 a week for public charges, but only \$2.68 inclusive of former public charges now boarding without public expense. The latter class numbered 16, 7 per cent. Thirty, 13 per cent, paid \$3.25 a week; 83, 35 per cent, \$3.00; 96, 40 per cent, \$2.80; 9, 4 per cent, \$2.50; 3, 1 per cent, \$1.50 to \$2.00.

How can families afford to take them at such rates? Experience proves that they can and are led by some inducement to seek them beyond our ability to furnish. They do not generally desire patients who cause much trouble or need much attention. More help is received than rendered by caretakers, who are relieved of many household duties in exchange for their oversight. Thus the caretaker's service and spare time are turned into cash, which is most acceptable to the matron of a home in the country.

Sometimes the work of a patient is valuable and counts in reducing the board rate. The houses in rural districts are usually large, with several rooms vacant without the occupancy of boarders. The garden or farm supplies much for the table, so that the outlay for food is moderate, while the filling of extra mouths may furnish a convenient substitute for a distant market. Clothing materials are bought, but the simple garments are home-made, often by the patient.

How are we assured of the good care of patients? Changes in their nutrition and general health are carefully observed by the visitors, who are physicians or general hospital trained nurses. Complaint or dislike, not transient, on the part of either patient or caretaker leads to transfer to another family, even though no good reason may be apparent. The absence of good feeling between them is likely to end in failure or abuse, which is thus forestalled. Patients see the visitors alone at each call, and usually reveal signs of discontent or dissatisfaction, which are not allowed to pass unnoticed very long. Frequent interchange between families are made, numbering 85 last year. Visitors take pains to elicit information from patients as to the character of families which they have left and then feel free to discuss, thus gaining good insight into their merits and deficiencies.

One's enthusiasm should not unduly expand the scope of this work. It is only a small part of a great and diversified system of care of the insane, having its limitations and restrictive conditions of propriety and safety. It should not be undertaken hastily, without adequate provision for its conduct with careful and constant discrimination by an experienced alienist and trained visitors. The potentiality of danger is inherent, as in all other dealings with the insane, who are unstable and may veil vicious motives and tendencies in apparently harmless guises. The selection of patients and families, their adaptation to each other, the ceaseless readjustment of relations between them and the public, require the highest order of insight, judgment and tact, without which in its direction public approval cannot be won nor retained. Careless or incompetent supervision would soon cause reversion to the abuses and criticism of early times. The director must know each patient, note mental and physical changes, gauge capacity for work, estimate its value in modifying board rate, pass on

ability for self-support, the safety and propriety of promoting it, etc. Therefore, advance should not be too rapid nor disproportionate to facilities of administration.

Although keenly appreciative of these restrictions, I am nevertheless thoroughly satisfied that family care is safe and beneficent, not only a *useful* but a *necessary* complement to any comprehensive system of public care of the insane.

The original organic law enacted in 1885 was revised and broadened by the Legislature of 1905, namely:

(Chapter 87, Revised Laws, as amended by Chapter 458, Acts of 1905.)

“Section 102. Any patient in an institution, public or private, used wholly or in part for the care of the insane, who is quiet and not dangerous nor committed as a dipsomaniac or inebriate, and who is under the supervision of the State Board of Insanity, may be placed by said board, if it considers it expedient, at board in a suitable family or place in the Commonwealth or elsewhere. Any such patient in a public institution used wholly or in part for the care of the insane may so be boarded by the trustees thereof, and such boarder shall be deemed to be an inmate of said institution. The cost to the Commonwealth of the board of such paupers shall not exceed three dollars and twenty-five cents a week for each person.

Section 103. Bills for the support of persons who are boarded in families by the State Board of Insanity at public expense shall be payable quarterly, and shall be audited by said board, and the board shall, at the end of March, June, September, and December, present to the auditor a schedule of all such bills as have been incurred, and said board shall keep a register in such form that the auditor shall be able to verify such schedules.

Section 104. The State Board of Insanity shall cause all persons who are boarded by it in families at public expense to be visited at least once in three months, and all persons who are boarded in families at public expense by the trustees of any institution authorized to board out its inmates to be visited once in six months, by an agent of said board. The trustees of every institution authorized to board out its inmates shall cause all persons who are so boarded by them in families at public expense to be visited at least once in three months, and shall inform the

State Board of Insanity of the location of every such boarder, and shall furnish such other information as the board may require.

Section 105. Said State board shall cause to be removed to an institution used wholly or in part for the care of the insane or to a better boarding place all persons who, upon visitation, are found to be abused, neglected or improperly cared for when boarded out in families. Said board may permit any boarder temporarily to leave custody as an insane person in charge of his guardian, relatives, friends or by himself, for a period not exceeding one year, and may receive him again into such custody when returned by any such guardian, relatives, friends or upon his own application, within such period, without any further order of commitment, and may during such temporary absence, assist in his maintenance to an amount not exceeding three dollars and twenty-five cents a week."

The authority hitherto held and exercised exclusively by the State Board of Insanity will now be shared with the trustees of each hospital and asylum. Although the State Board will encourage and appreciate their participation in these duties and yield precedence, so far as they may be willing to assume them, its own energies will not be relaxed in forwarding the work beyond this point.

A beginning has already been made by the Westborough and Northampton Hospitals, the former having placed one patient, the latter 12, of whom 9 now remain in families.

A new provision of the law permits the State Board to remove a patient's name from the roll of family care and restore it without new commitment at the request of friends or the patient at any time within one year. During this probationary period the funds available for family care may be used, at the discretion of the State Board, to tide the patient over periods of illness, loss of employment or any disability, without new enrollment.

It is sometimes desirable for a boarder to pass out of the legal status of insanity before her stability has been fully tested, either because she may be worried by what she deems a lack of confidence in her or because a prospective employer may have a lingering doubt of her trustworthiness unless our assurance to that effect be reinforced by the act of discharge. The cause of

hesitation is removed by the right of re-enrollment without legal formalities. But the latter step may not be necessary or may be regarded as humiliating by the patient, although immediate assistance may be urgent. The availability of family care funds for such relief fills this gap.

These provisions lay the foundation of a partial "after-care" work, to which family care is intimately related and might be an effective auxiliary. Certain families advantageously situated in large towns or small cities, where appropriate employment may be had, are already being used by us as temporary homes for recovered patients from the hospitals and those who are suitable to leave family care while they are seeking positions and gaining self-maintenance. The usual agencies to this end are found to be reluctant or unsuccessful in serving such patients because their patrons are unwilling to employ them because of previous insanity. These patrons are reassured by seeking the same patient living in a family and recommended by her caretaker, who speaks from personal knowledge.

The time soon comes, however, when most patients wish to break with all associations which remind them of a painful episode in their lives. They shrink from the calls of visitors lest they reveal their past to acquaintances. Many such are passing out of our hospitals as well as family care, who need friendly counsel and help intermittingly, which might carry them over periods of stress and prolong their stay in the community. Pure "after-care" work would seem to be begin at this juncture and be the part of private philanthropy.

DISCUSSION.

DR. HURD.—It would be a matter of great interest to other States if Dr. Copp would tell us briefly how these homes are found, who the people are that are willing to entertain and care for strangers of this sort, and whether in the event that agreeable relations are formed between the unrecovered patient and the family, how long they are likely to continue. Also to know whether the exceptions that occur are a source of anxiety and to what extent the complaints of the restless and uneasy patient who wishes to get away for the sake of a change are recognized. Such additional facts would be of great interest to us all.

DR. G. H. HILL.—I would be pleased to have the doctor answer the question as to what extent these women find duty in the families where they live, and what kinds of work they can do satisfactorily.

DR. McBRIDE.—I assume that the insane who are selected to be boarded out are essentially incurable. Though I have had no personal experience with this system yet it has always seemed to me a bad practice to put insane people into private families to live.

All those who have written on the subject of boarding out of the insane have, so far as I know, considered the subject from the standpoint of the benefit to the insane person. I have never heard anything said in regard to the influence of the insane upon the sane people with whom they are associated as boarders. In the articles I have read on this system as carried out in Scotland and in this country, the accounts of the very delightful life lead by the insane in private families and the pleasure of their hosts in having them has caused me to wonder why any one with a home would be willing to be without one or two insane persons in the family.

The one vital point in this matter that seems never to have been considered is the effects upon sane people in being so intimately associated with insane persons in the home. If it is true, as I suppose we all admit it is, that our mentality has largely been built up by our human environment, the association and attrition of mind with mind, we are then influenced for good or evil by every one that we are intimately associated with. This is, of course, a fundamental law of mental life, though we too often ignore it in practice.

The majority of the insane who are boarded out are put with farmers. For a person whose life is as lonely and isolated as is that of the farmer to be daily associated with insane persons in the home will, I believe, be injurious to some of them, and that it is injurious to any is a condemnation of the system.

The reply to this objection will probably be that no cases of insanity have been traceable to this cause. We would not, however, expect people to be made insane by this relation, and yet it hardly seems to me possible that harm would not sometimes be done. If the insane man absorbs something of healthy mental influences from his host is the latter entirely uninfluenced by his boarder? If the farmer's mental life is largely fed by human relations, as it surely is, is it possible that he is immune to mental morbidness, that his mind rejects the mental influences of his insane associate?

That the people who care for the insane under this system wish to have them in their homes is not evidence that the system is a wise one. It was certainly a great moral and social victory when the insane were segregated in institutions, and not the least gain was the fact that society was rid of the evils of their morbidness. Is it advisable to reverse this practice, even in part, and put the lunatics into private families, and this too with those whose lives are usually simple and narrow and easily impressed by the strange and bizarre and morbid.

We may call this system humanitarian or whatever we choose, but by whatever soft names we call it when we put the insane with private families to be cared for we are practically making an insane asylum of the home.

If I am wrong I am ready to be convinced on this or any matter; am willing to pull up by the roots all my ideas of the psychology of daily life if anyone can show that my position is not sound.

DR. DEWEY.—After-care, as understood by many, and as it is applied to the work in other countries, where it is developed much more than in this country, such as the After-Care Society of London, and of Paris, is supposed to apply mainly, if not wholly to recovered patients, those who are discharged as recovered from the institutions. Yet there is a great deal of confusion in the matter, and I do not think a very definite understanding has been arrived at as to the nature of the work that is advocated and undertaken in this country.

The care of patients after leaving the institution who are not recovered is a different matter, and yet a very important one, and the objections which would apply to patients who are not recovered would not apply to those who are really, as we know many are, returned to the normal or nearly normal status.

It is evident there can be no question that certain restrictions are very desirable and necessary in receiving patients into families, whether they are supposed to be recovered or only partially so. It is not likely to become an urgent question in this country, I think, because the number of families that are apt to do it would be very small. I think no families where there are young children or other cases of neurotic individuals should receive such cases, it would be undesirable reciprocally, and I think any comprehensive system of after-care could and would inquire into all these questions.

I feel exceedingly interested and am very glad to know that a beginning has been made in New York in endeavoring to bring to bear the beneficent influences which undoubtedly can be exercised by an association which will interest itself in those who are leaving the institutions for the insane and help them to get started again in life, and there is no question but that this is a field of very desirable benevolence.

DR. COPP.—As regards Dr. Hurd's questions, we are often surprised at the good qualities and character of the families who receive these patients. In one town the village doctor, postmaster, town clerk, and many of the best people have them. Moreover, they keep them for long periods, rarely giving them up unless some change of circumstances compels them. Many of them have been caring for patients ten, fifteen, and twenty years. It is encouraging that they become interested in them, and are often willing to make personal sacrifices without compensation, which they could not be hired to make for new patients.

Frequent changes, especially of new patients, are made between families to find those adapted to each other. If either patient or care-taker is dissatisfied, or if the patient causes worry a transfer is made. This avoids trouble and helps us to determine whether the patient or care-taker is at fault.

Now it is necessary to get the right point of view in judging this work. I believe if you were to visit these patients you would find little to criticize, and would be convinced that the family, as well as the patient, is being benefited. We are not turning the community into an insane asylum, nor removing patients from institutions who ought to remain there. Our first question is, "Ought this patient to remain in the hospital?" If it is answered in the affirmative, she remains there. If in the negative, we first approach the friends with a view to her going home, if conditions there are suitable; if they are not, we try to find the right environment for the patient. In several instances we have succeeded in helping patients to become self-supporting in new surroundings who had previously relapsed under the conditions prevailing at their own homes.

We seek to return to the community only such patients as ought to live there. We render them the assistance which they need and would otherwise be unable to command. They are carefully looked after by an experienced alienist and trained nurses, who visit them regularly.

One patient in every five becomes self-supporting. We take some recovered patients, but most of them have suffered brain damage to a greater or less degree.

The strong feature of the system appears in its provision of a permanent organization for studying in a broad way the needs of patients with reference to discharge from institutions, clearing away obstacles, opening up opportunities which would otherwise be impossible to them, and supplementing other agencies wherever deficient. The patient who has friends does not require it. Many such are leaving institutions constantly through the importunity of friends whom we would not think of placing in families, but there are many suitable patients in our large hospitals who remain there only because of the absence of a helping hand. The primary aim of family care in Massachusetts seeks to reach this class and render them the necessary aid. It is more a form of "after-care" than merely boarding-out.

THE PRESIDENT.—May I interrupt to ask a question? Have you patients boarding out who have homes of their own, but for some reason or other do not occupy them?

DR. COPP.—No; not as a rule. We have a few patients who had homes to go to, but it was not practicable for them to do so. They usually go home in the end. We have placed out a few patients whose friends never went to the hospital to see them but became willing to take them home after they had boarded six months or a year in families.

We have not had time to do much with men. A few have been placed. It is easier to place women, because we have plenty of applications for them. We could place fifty to-morrow. The work must be done slowly. We have made no effort to find families who did not apply to us spontaneously. Care-takers do not regard their patients as insane usually, only peculiar.

CONDITION OF THE HEART IN DEMENTS.

By EDWARD FRENCH, M. D.,

Medical Superintendent Medfield Insane Asylum, Harding, Mass.

Mr. President, Members of the Medico-Psychological Society:

In every institution of considerable size there is bound to be an accumulation of human wrecks whom we class as demented. We latterly divide these into sub-divisions, such as precocious demented, terminal or secondary demented, epileptic, alcoholic, parietic demented, etc. The condition of dementia is not one of strict classification, and as Bianchi truly says, "Dementia has no place in classification, because it is not a morbid entity, but an issue of all acute and chronic mental affections not followed by recovery."

Perhaps the largest percentage is due to primary attacks of dementia during or immediately following the adolescent period, and which we now call dementia præcox. The large number of such cases remaining in our public institutions constitutes quite a problem in their management. They vary considerably in condition. Some are apathetic, sluggish, and accumulating fat, with no disposition to move or do anything of their own volition. Other cases are more restless, mischievous, causing trouble both in their management and to other patients. The picture is a common one to all asylum physicians. Formerly our concern was to find the best means of *caring* for this class of patients. We had little faith in the cause of their improvement. The aspect of the case was entirely different from what it is to-day. Kraepelin had not then pointed out that the case of dementia præcox was liable to exacerbations of violence, but lately it has been driven home to us by several homicides and our more careful observation. The ideas of the hospital superintendent regarding these cases has entirely changed in the past few years, and now instead of the question of care it is one of how to occupy these patients and in what way to re-educate them. Experiments have resulted in showing us that the dementia is not as profound as we for-

merly thought it to be, and that the individual is capable of considerable development in an industrial and personal way. This applies, of course, to those cases where the functions are fairly well performed, even if somewhat imperfectly; for we have all noted from our practical experience the apparent failure of many of the physiological functions, most notably those of circulation, digestion, assimilation, and that delicate combination of physiological processes which we call metabolism. We have found out that these can all be vastly improved by proper exercise, and it is our modern problem to provide this in our public institutions to-day.

What I am to consider to-day is first the circulation, and second the heart action in such cases. Some of our modern authors note changes in the circulation and heart action of demented, but it is almost entirely confined to contemporary writers. Among these, Berkeley says, "Vaso-motor pareses, shown by blueness of the extremities, low tension of the arteries, and œdematous conditions of the feet are equally frequent. Arterio-sclerosis is present in a large proportion of cases, even those occurring in earliest adult life." Kirchoff, speaks of "Brittle arteries and senile changes in the heart." Kellogg says, "The circulation is impaired. There is vaso paresis and enfeebled cardiac action."

My assistants have for some time past been making physical examinations of the hearts and the circulation of demented, preliminary to blood examinations. These examinations have so far only been confirmed in a few cases by autopsy. Over 700 cases were considered, and 550 odd cases were selected as proper ones for the collection of statistics along the lines mentioned. Certain doubts assailed us before this examination began. Among others, in certain cases it seemed possible that the demented condition might be due to senile changes of the heart and arteries. A study of the history of these cases showed that it was not possible except in a comparatively few cases, and these were accordingly thrown out. As a general proposition I believe that the condition of dementia is due only in a small number of cases to atheroma and senile changes. I also believe that these are confined to those cases where the psychosis appeared beyond middle life. The 550 cases from which I have drawn conclusions are

those of terminal dementia due to functional psychosis, and all cases of toxic insanity, paresis, epilepsy, and other psychoses which are not decidedly functional have been thrown out, so that the statistics apply solely to cases of terminal dementia or dementia præcox. A few were discarded because of difficulty in getting clear results in physical examinations, owing to excessive fat or the great restlessness of the person under examination.

I will first consider the observations made on pulse and circulation and analyze the results obtained. The lowest pulse observed in a male case was 50. The highest 120. It was noticed here that frequently patients with considerable atheroma did not have a pulse that was remarkable in any way. The highest pulse rates were found in those cases where it was expected and where a weak heart action seemed to be the cause, and also this weak action of the heart seemed to account for nearly all the rapid pulses in the whole number of cases. Many of the male cases showed nothing abnormal in the examination for heart symptoms, but the cyanosis and oedema of the extremities together with the high pulse which indicate a weak action of the heart. The average pulse rate for nearly 200 men was $78\frac{1}{2}$ per minute. There were 15 cases of marked tortuosity in the radial and temporal regions. There were 84 male cases in which atheroma of the arteries could be made out without any reasonable doubt in the radial and temporal arteries. There were 12 cases of irregularity, 8 of these 12 being intermissions.

The lowest pulse rate in a woman was 40. The highest was 140. The average pulse rate for 363 female dements was almost 86, being more than 8 beats higher than the average pulse rate for the male dements. The abnormalities among the women were not as great as among the men, that is, a weak pulse was found where it was to be expected and a high pulse where that would be looked for. Many of the cases of low pulse rate showed hypertrophy of the heart, some of them atheroma. There was marked tortuosity in the temporal and radial regions in 28 women. There was evident atheroma in the radial and temporal pulse in 40 female cases. This was very much less than among the men. There were 22 irregularities, 19 of these being intermissions.

Careful examinations of the heart's action, position, strength, etc., resulted in the following statistics. Among the 78 cases of

the men where the radial pulse could be characterized as weak, the action of the heart corresponded in only 55 cases. Thus there were 23 more cases with a weak pulse than with a weak heart. This can be accounted for in several ways, and is almost evidence of the existence of atheroma. I am inclined to think that autopsies in such cases will show atheroma of the aorta and other large vessels and prove this to be a valuable diagnostic symptom. Among the female cases there was a greater difference. One hundred and fifty-two women showed a weak pulse while only 107 showed a weak heart action. It will be noticed that this is more in conformity with the high pulse rate in the women than this result is among the men. Œdema of the extremities with cyanosis was present in 22 men and 55 women. It was found that but in a very few cases this was due to vaso-motor paresis and a weak heart action.

Hypertrophy of the heart was found in a higher percentage of men than among women, there being 23 men out of 178 cases and 24 women out of 363 cases. In determining the question of fatty hearts or chronic myocarditis, the bodily condition of the patients was used to partly determine this fact or to corroborate a probability. It was found that 42 men and 60 women were quite stout, and it is probable that a large proportion of these have fatty hearts. The difficulty of determining this condition from physical examination makes it only a probable conclusion. There were 7 malpositions of the heart, most of these being crowded to one side. Among those diseases of the heart which may be classed as organic or valvular, it was found that 12 men had mitral regurgitation. There were 34 women with mitral regurgitation. All other murmurs were classed together for convenience in this paper, and 27 men had other murmurs and 87 women. Evidences of former or chronic endocarditis were found in 4 men and 16 women. Nine cases of malformation of the chest were discovered. These 9 cases were those of the skeleton alone, as collections of fat and muscular abnormalities were discarded. Four of these were the cause of the malposition of the heart. Seven of these I believe were congenital and think may be possibly stigmata of degeneracy, as there was some other asymmetry of other parts of the body. The other two cases were evidently traumatic.

In conclusion and in a way of general observation, the following is apparent. Those demented who have been regularly employed have a better circulation and a stronger heart action. They are in better bodily condition and are not as fat as the apathetic and more demented cases which take but a moderate amount of exercise. It was a surprise to find a few among these working demented those that seemed to be in the best bodily health previous to this examination, had valvular heart disease. Compensation had probably been established for a long time so that most of the cases got along very comfortably.

The lesson which these statistics has seemed to teach to me is that patient, constant endeavor should be exercised to induce these patients to work. It is beneficial in many ways. It improves the bodily health and the mental condition of the patient, re-educates him to a better care of his person and to make a better toilet, and it partially solves the problem of ridding the public institutions of this great mass and accumulation of inert humanity.

DISCUSSION.

DR. HUGHES.—If I had time I would make a more forcible plea than I can make on the present occasion for more consideration for the dement, the senile functionally demented. It has been the custom in the old asylums especially, to single out the demented as patients who require no further attention, and thus the superintendent and medical officer is enabled to give more attention to what are called acute cases and curable cases. Now while dementia as a rule is organic not curable, we have sometimes other cases which we consider dementia that get well, because dementia is also a symptomatic expression of a state of the brain which is not always organic, and such patients may improve and recover. The tenor of this paper accords with my personal observation in practical psychiatry.

MANIACAL CONDITIONS IN YOUNG ADULTS. WITH ABSTRACTS OF CASES.

By CHESTER LEE CARLISLE, M. D.,

Willard State Hospital, Willard, N. Y.

An extended clinical observation of the psychoses with maniacal episodes occurring in the melange of admissions to Willard State Hospital and Manhattan State Hospital of New York State, has drawn my attention to the fact that there are a number of cases constantly found which present peculiar difficulties of diagnosis. These are found among young adults, and show neither the symptom complex of a fairly typical manic depressive or non-deteriorative psychosis, nor that of katatonic excitement in dementia præcox, a deteriorative psychosis. After discussion, the cases have usually been pronounced, on their first admissions, as a form of dementia præcox, but later after a practically complete recovery with relapse and readmission, opinion has divided and the cases are usually re-diagnosed as manic depressive psychoses.

It is at once obvious that the questions which first arise in the reconsideration of these cases and on which an accurate prognosis depends, is: 'Were the recoveries absolute or not? Was there the slightest degree of psychic enfeeblement after the attack or was it overlooked'? Conversely, we remember that there is never noticeable mental deterioration between the attacks of a manic depressive psychosis. Close discriminating attention to the details of each case can be the only means of making a positive differential diagnosis. For this reason I append the brief abstracts of several cases, illustrating the mooted points.

It has been said that manic depressive insanity is a psychosis of degenerates, a statement which our experience sustains. That dementia præcox is a psychosis of heredity our later statistics show most emphatically, where, according to carefully compiled family histories, we find approximately 75 per cent of these cases have either an insane or a neuropathic heredity. All of the ap-

pended cases have either insane or neuropathic antecedents, indifferently distributed on both the maternal and paternal sides. The birth and early development of these patients has been practically normal in each case, and they have been able to proceed satisfactorily with their school work and later at their several vocations without attracting the attention of the community in which they resided, up to the time of the acute onset of the psychosis, which has invariably occurred during the late adolescent period. The social plane of these patients is in general that of the ordinary respectable farming community, or unskilled laborers in towns.

The immediate exciting causes of each psychosis has been of a trifling nature, the psychosis developing rapidly after varying short periods of physical exhaustion usually following a slight illness or overwork. This short prodromal period is never marked by deep depression. The symptoms exhibited were, an increasing flightiness with a growing tendency to marked motor activity, culminating in extreme reactions to delusions and hallucinations. The ego is constantly prominent, but the delusions rarely show much systematization. The hallucinations are of a transitory type, and while they are never particularly vivid, yet they are much more prominent than we would expect to find in a typical manic case.

The general mental attitude is that of indifference to all the accepted proprieties of life, as a reaction to the fatuous egotism, which rapidly increases in intensity. The line of general conduct is that of affectation, often assuming ridiculous extravagances of behavior with irritability, leading to episodes of assault without sufficient delusional or hallucinatory basis. On admission, the patient rolls around in bed aimlessly, turns his back on the examiner, grimaces and stares fixedly at one point. With this behavior is associated various peculiarities of manner, such as closing one eye, holding the hands stiffly in the air, etc., and in certain instances showing a tendency toward repeated senseless actions, exhibiting mannerisms and atypical stereotypy to a greater or less degree. Negativism is developed only imperfectly and is exemplified chiefly in refusal to answer questions. This condition varies from a simple delay in response to real mutism for hours at a time.

The patient may then become spontaneously productive in an incoherent way to the point of prolixity, singing, shouting and usually addressing himself to space as though responding to aural and visual hallucinations, but often denying any hallucinatory disturbance when questioned. Marked catalepsy is never observed in this class of patients, but the discovery of its more delicate manifestations is vitally important and will be found in the aimless change of accustomed movements and other mannerisms.

The attention of the patient is usually obtained with some difficulty, due chiefly to elements of resistiveness and indifference to external impressions or to the advent of purposeless impulses. There appears to be little of the constant ebullient change of correlated ideation found in typical manic depressive cases. Although spontaneous production is present, it is remarked that it is a confused jargon, broken by succeeding impulses usually expressing expansive tendencies, with a childish irritability and reactions of violence rather than true flight of ideas or of topics. The observer is impressed with the element of abortiveness shown in all these cases, ordinary action suddenly becomes violence and as suddenly changes to a mannerism or an absurdity. Speech is now a shout, a laugh, a mumble, an impulsive sentence ending with strange obscenity. Ideation is now on ethical subjects, now on religious and again on erotic matter before the idea preceding it can find complete expression. All of which is in marked clinical contrast to the psychic fluency, so to speak, shown in manic excitement, where the intellectual processes are unimpeded, the mood is high and the emotions unrestrained.

The good comprehension on immediate environment shown by these patients produced at times a simulated distractability. Shown a watch and they will often gaze at it, perhaps reach for it, and after a moment it may figure in their talk, but all is done in a listless way, in a lethargy of attitude which is quite distinct from the eager seizing on every object as a motive for a new flight of ideas as seen in the manic cases. Katatonics may be momentarily diverted by attractive sights and sounds, but their impulsive ideation is too strong to be readily distracted, while their deteriorated will power adds to their unresponsiveness. The powers of retention in our cases, both for immediate, recent and

remote past, have been the source of considerable argument on the grounds that deterioration sufficient to warrant a diagnosis of dementia præcox, did not exist. If they will these patients can all give an accurate account of their early life, school experience, and later happenings with remarkable accuracy. School knowledge is as well evidenced as their educational opportunities allow. They are commonly well oriented for time, place, and person, often giving the exact number of days or weeks that have elapsed during their discharge and readmission to the hospital and giving other instances of accuracy as to dates. Personal identification was never greatly impaired. They will recount experiences with various physicians and nurses extending over a period of several years and on further tests we come to the conclusion that there is no gross deterioration discernible. This "confusion of expression in speech and the slight disturbance of comprehension and sense of position" being particularly remarked by Prof. Kraepelin.

Their insight on first admission is usually nil, but upon the occasion of subsequent admissions and re-examinations, it is evident from grimaces and evaded questions that they have at least a partial realization of their condition.

General mental grasp is usually fair, varying at intervals, often being abrogated by impulses and delusional states, which also determine the instability of the patient's powers of reason, logic, judgment and other complex psychic processes. We are led to conclude by the patient's behavior that while he is able to reason out primal situations, his mental confusion is so great, his inhibitory mechanism so weakened, and his impulsive and delusional states so strong, that his resulting conduct or speech bears no relation to his comparatively unaffected sense of general position or mental grasp.

The delusional content of the cases in question is rather constant, but having varying expression. Egotism is the substrata of all ideation upon which basis is built a flimsy superstructure of fatuous religious, political or ethical ideas. The expression of these delusions often takes on for a time a paranoid trend with the resulting characteristic style of speech and action, but later such a degree of mental confusion is present, due to the multiplicity of half formed impulses, that spontaneous production assumes

a disjointed ramble of broken topics with ideas imperfectly related, mixed with meaningless words and sounds carried to the point of occasional rhyming. In the less markedly disturbed we are more apt to find forms of verbigeration and echolalia. In some cases the disjointed talk, enunciated poorly and in a low tone of voice, modulated unevenly and often interspersed with laughter or shouts, may simulate the muttering, delirious type of spontaneous speech found in acute toxic conditions. This condition would be differentiated from katatonic excitement by the absence in the latter of the extreme perplexity and inability to identify and interpret the personal state and environment.

The hallucinations found in our cases offer another stumbling block to diagnosis for they are not, as a rule, as well developed as we are led to expect in dementia præcox. They are usually of a transitory type and speedily disappear under treatment. Of the various types found, auditory disturbances appear to be the most frequent, with visual hallucinations as a close second. The voice of God, King Edward, Roosevelt and other notables, as well as the voices of neighbors, friends and enemies are types commonly found, while the sight of Christ and other strange personages, either of an exalted or menacing personality are daily occurrences.

The combination of the fatuously expanded ego and the auditory and visual hallucinations produces a clinical picture quite typical of these cases, in which the motif is fairly constant, and with resulting similarity in conduct as the reaction to these morbid processes. The patient believes he is the Savior of the World—the great annointed prophet or the man who is to save the United States from ruin—he is appointed by God to be the Czar—he is the Christ, etc., to which ideas the patient reacts, imperfectly, developing and systematizing his delusions upon the later development of other vivid transitory hallucinations of sight or hearing and possibly of other senses. Impulses and compulses are commonly found; in one case taking the form of upsetting all the ink bottles he saw. These symptoms, however, may be so little developed that they are but barely discernible as eccentricities of the patient's personal equation. They should be particularly sought for during the period of so-called recovery, when they may be found as the minor characteristics of the individual.

As gross deterioration is not exhibited, it is only when we examine the higher emotional processes that we are able to find evidences of mental dulling. At times this is so slight as to be questionable and appears yet more so upon the ready amelioration of the psychosis and especially as we find no apparent permanent mental injury existing when the case leaves the hospital. On closer examination, however, we find that the emotional indifference which existed throughout the entire psychosis persists in a degree after apparent recovery. This slight emotional indifference being particularly remarked in the patient's attitude towards his moral and ethical relations to the community. When questioned as to the recent illness the patient smiles, hangs his head or lightly replies: "I guess I was off my head," or some similar phrase. He does not appear to be in any wise anxious over his past condition, nor agitated lest he have a relapse. He remembers his foolish conduct, his mutism, resistiveness and delusions, but treats them in the light of a joke. In this respect it would appear as if the mixed emotions of regret were most greatly injured. Superficial insight is present, but deep insight is not.

These conditions constitute the salient characteristics in all the so-called recoveries of this class of patients. A manic depressive case will usually take a deep interest in his condition, according to the degree of his original intelligence, looking after himself with solicitude and seeking means to avoid a renewed attack of his malady, and expressing by his conduct and speech a normal interest in his past illness.

In thus differentiating the recovered states of these two psychoses, the elements of normal embarrassment, modesty and a retiring disposition on the part of the patient must be taken into consideration, as well as evasiveness and malingering from a false sense of shame and dread of acknowledging that they were ever "really insane."

The brief abstracts of the appended cases I believe will show this class of patients to be of unusual interest; the diagnosis of which I make as that of katatonic excitement, a form of *dementia præcox*. As it is a deteriorative psychosis the prognosis in each case is decidedly unfavorable so far as the continued effectiveness of the individual is concerned, but is fair under conditions of proper after-treatment. The patient will be able to as-

sume simple duties without harm under competent supervision. A diagnosis of manic depressive insanity, I believe to be unwarranted in spite of the absence of marked emotional deterioration and the tendency to atypical flights of ideas and topics, with speedy amelioration and frequent recurrences.

C. H., No. 10,770.—A psychosis occurring in a male, white, age 22 years, nat. U. S., laborer, single. Admitted to W. S. H., January 30, 1906.

F. H.—Early antecedents unknown. Father alcoholic and at one time insane. Mother also insane, details of which are not definitely known. Patient has one brother, Frank, now an inmate of this hospital; case of dementia præcox deteriorated to a slight degree. Patient has one sister and two half-brothers in good health. The whole family was never of a particularly high intellectual order, but otherwise, beyond what is noted, there is no evidence of insanity, epilepsy, chorea, or other constitutional disorders.

P. H.—Born and raised on a farm. Birth and early development normal, but environment poor and educational days limited. Began school at the age of six and attended irregularly, working on a farm. He obtained an elementary education. General disposition mild, habits good. Continued work on the farm as an ordinary laborer and did not show any mental symptoms until the age of eighteen, after a prodromal stage of four months. There is no history of severe illness occurring in patient's life, nor of any particularly active exciting causes in the first psychosis beyond a strong hereditary history. At this time patient developed delusions of a persecutory nature; that his food was poisoned; developed hallucinations of sight and hearing, saw angels and other objects, became suspicious, apprehensive and afraid; never wished to be left alone and slept poorly. Admitted to this hospital, March, 1902. Confused, at times refused to reply; appeared as a case of katatonic stupor with mutism, restiveness and mannerisms. Deteriorated, did not comprehend what was said or done around him or the general character of his associates. Physical condition poor; gradually improved, and while showing no gross deterioration showed some latent deterioration in his indifference to ethical conditions in general. Discharged recovered, November 9, 1903. After the patient's discharge he worked on a farm as a laborer, remained one year with one man, giving good satisfaction. The next year also worked on a farm and also gave good satisfaction. March, 1905, went to Palmyra, worked in a livery stable two months, then in September went to work with a telephone company, and in January, while working for a Buffalo telephone company became disorderly, insubordinate, and was discharged. This was due to his having indulged in alcoholics to excess and associating with a dissolute class of people, going on drunken debauches with dissolute women, etc., and contracting gonorrhœa. He was also exposed to great physical

exhaustion during his period of employment with this telephone company, as he was engaged in putting up poles, etc., and other rough work.

Onset.—January 25, 1906, became boisterous, insulting, disturbed over trifling matters with his fellow workmen, lacked all self-control and eventually developed homicidal ideas and delusions of a persecutory nature. He appeared to have some insight into his case; said he was insane and thought it would be a good idea for him to come to Willard. January 27, became homicidal, made demonstrations against his uncle and was finally committed.

On Admission.—Patient shows marked disturbance as a reaction to delusions and hallucinations, showed great resistiveness, tendency towards mannerisms, peculiarities of conduct, exhibited mutism at times, and at other times showed marked prolixity in a rambling, incoherent way. Ideas of a persecutory nature with grandiose trend. At times muttered in a low tone, gesticulating with his hands, but while in the midst of this apparent confusion patient was well oriented and had fairly good mental grasp on the surroundings. Physical condition fair.

MENTAL STATUS.—*Attitude.*—That of suspicion and fear with reaction to same, due to delusions and auditory and visual hallucinations.

Manner.—Restless, rolls around in bed, puts his arm over his eyes, straightens it out in the air, pounds the pillows, folds the bed clothes into knots, closes his eyes, puckers up his face, holds his arms stiffly together, stares at one object, but in the midst of this has excellent sense of identification and fair mental grasp.

Attention.—Is difficult to obtain, held with difficulty, constantly wanders away as hallucinations of sight are so strong. Attention diverted by impulses; no true distractibility shown; will pay no attention to noises, etc., and will not respond to articles exhibited in front of him.

Retention.—Good for immediate, recent, and remote past, when attention can be sufficiently concentrated on the subject. At such times good information can be elicited from him.

Emotional Trend.—That of indifference, laughs and grins, does not care about his condition; does not realize the enormity of his sexual excesses, etc. States that he was insane once, but does not appear to worry about it. Statements in this connection marked by fatuous egotism; says he was tickled to death to get out of a job; that he never had "snakes" and only got drunk twice.

Spontaneous Speech.—Well marked; but not to the extent of garrulity. Talks often in a low tone, mumbles to himself, often mute and will persistently refuse to open his lips; holds his hands tightly over his face and cannot be induced to speak. In this respect showing very considerable degree of mild negativism and resistiveness.

Delusional Trend.—That of fear and persecution on basis of mild grandiose ideas, also some religious ideas. Says that he was a great man for Jesus, that McKinley and other celebrities visited him, Paderewski played for him, Edison and Roosevelt turned electricity on him. Patient

will make long statements of disconnected facts, which may be regarded as the expression of impulses, rather than as true flight of correlated ideas. Shows repetition of same words and sentences with evidence of verbigeration but no evidence of rhyming.

Hallucinatory Trend.—Appear vividly of sight, hearing, touch, and taste. Saw many famous men, went to hell and saw yellow flames, fire, smoke, etc. Tasted poison in his food, smelled sulphur on his hands and body. Heard the voice of these various characters, heard Christ's voice, Paderewski's piano playing, Victor talking machine, and other queer sounds.

Deterioration.—Shows little, except in regard to emotional tone and moral responsibility.

Reading and Writing.—Ability for reading and writing good, considering his education. Paraphrasing very poor.

Calculation.—Good for ordinary problems, but will not cooperate in the tests. Refuses to pay any attention to test numbers and phrases.

Orientation.—Perfect for place and person, fairly good for time. Says this is January, when it is February.

Mental Grasp.—Poor for the seriousness of his own condition, but good for general environment, both for this and former admissions. Knows the character of the inmates, the duties of those on the wards, the physicians, etc.

Insight.—Apparently lacking, probably exists in a slight degree, which patient tries to deny. States that he is not insane, that he has been drinking and nervous. Makes other inane excuses of a similar nature.

Physical Examination.—Male, white, fairly well nourished, a large boy for his age. No marked stigmata of degeneration. Facial expression good. Peripheral circulation rather poor. Skin rough and scaly. Organs of special senses normal, but show hallucinations of each. Chest shows moderately diminished breathing sounds, posteriorly on the right side, but no marked rales. Heart enlarged to the right, apex beat visible, palpable. Mitral systolic sound reduplicated at irregular intervals. Aortic diastolic sound accentuated at the second right interspace. Pulse, 72, 76, 80, arrhythmic regular, volume rather small, tension high. No organic or heamic murmurs found.

Abdomen.—Gall bladder palpable. Kidneys normal. No albumen or sugar in urine.

Genital Organs.—Shows recent gonorrhea. No evidence of syphilis. Otherwise negative.

NERVOUS SYSTEM.—*Superficial Reflexes.*—Generally normal.

Deep Reflexes.—Patellar both exaggerated, especially on the right side. Elbow jerk much less exaggerated than the knee jerk, right more than the left. Very little wrist jerk can be elicited. Organic reflexes normal.

Muscular System.—Well developed, no marked tremor of tongue or extremities, beyond that of fatigue and excitement. No indications of neuritis or other organic degenerative lesions. No Romberg, nor paralyses.

Vasomotor Reflexes.—Skin flushed more or less constantly. Hands and feet cold, with a tendency to excessive perspiration.

Etiology.—Predisposing cause: Heredity. Exciting cause: Alcoholic excesses and overwork with exposure.

E. C., No. 10,482.—A psychosis occurring in a male, age 22 years, nat. U. S., white, single, occupation farmer. Admitted to W. S. H., August 24, 1905.

F. H.—Mat. great-grandfather at the age of 75 became insane, had delusions of grandeur and wealth, died at the age of 82 of senile dementia. His son, mat. grandfather of patient, became insane aged 67; was dominated by delusions of a religious character and died at the age of 73 in a demented state. One mat. male cousin insane, details unknown. One mat. uncle became insane aged 50, with ideas of a religious character, and at the present time is a patient at Independence, Ia. One mat. female cousin, Irene Bates, has been a patient in W. S. H. Father, aged 67, is living and healthy; twice married; had 12 children in all. One girl died at the age of two and one-half years, cause given as insanity, as a result of measles. Mother has been very nervous all her life and is thought to be peculiar.

P. H.—Born in New York State, 1883. Birth and early development normal. Developed well as a child, began school at the age of 5 and after acquiring a common school education began work as a laborer on a farm. Had the usual children's diseases with uneventful recoveries and had never been seriously ill until the age of 19, when he showed signs of active psychosis, brought about by overwork. Was admitted to W. S. H. May, 1902, as acute mania and discharged October, 1902, as recovered. He had been suffering from kidney trouble for sometime previous to the onset of the psychosis; was actuated by delusions of grandeur, started himself in the telephone business foolishly; was elated, loquacious, prolix, spontaneous conversation showed marked elation with expansive ideas; was emotional and at times more or less incoherent. Recovery was rapid, and upon his return home he worked on the farm for a while and then went to the Pacific Coast, where he continued in good health until February, 1905, when he suddenly returned East without cause. Was noticed to be religiously inclined and after beginning work on his father's farm, in August, 1905, attended a camp meeting, where he became much excited and on his return home prayed, shouted and sang all night. Continued at work until August 16, when he drove to Hornellsville with his mother. On the way home became suddenly excited, shouting and singing and lashed the horses all the way home, talked constantly and tried to force one of the horses to jump through the barn window, laughing as he did so. When approached by his father became irritable and threatening and when finally taken to his room became destructive, kicked the plaster off the wall and destroyed the furniture, talking constantly in a religious strain, showing some flight of ideas. August 17, jumped out of a second-

story window and fractured the left clavicle; said God compelled him to do so; was put to bed and became more and more excited and would not allow the fracture to be dressed and tore off the bandages later when they were put on. He was constantly elated, singing, whistling, shouting and talking on religious subjects, threatened to kill everybody around him, slept little and ate nothing.

On Admission.—Was at first fairly quiet and orderly, but soon began to develop marked elation with increased spontaneous speech, talked constantly in a rambling manner on religious subjects with more or less connection of topics and was emotional concerning same. Began to pray and shout and slept very poorly.

MENTAL STATUS.—Attitude.—Was rather apprehensive and suspicious. Acted as if expecting something terrible to happen to him.

Manner.—Takes long breaths and rolls around in bed, screwed up his face, twisting his arms and legs in peculiar positions and holding his whole frame rigid, and at such times his resistance is so marked that he can be lifted from the bed without changing his pose. He is mute at intervals and refuses to speak as a result of the command of God.

Attention.—His attention is easily obtained when he is not resistive, but is not well retained, as his ideation is constantly that of fear, to which he constantly reacts. Mildly distractible, but not to any marked extent, and while he will notice noises and objects yet he does not comment upon them particularly.

Emotional Trend.—That of fear and suspicion, and as a result of his religious ideas he weeps at times, thinking the world is going to come to an end and that he must save the world from sin, etc.

Delusional Trend.—Is of reigion, and in his spontaneous account he shows considerable tendency toward flight of ideas. Said: "There is a fire prepared by the devil and I am not afraid of that fire. I have no fear for myself. We are all born in sin. I saw Christ standing in this room. He helps me all the way."

A bunch of keys was rattled and he said: "I hold the keys. I see the light. He said, 'I am not He but Him that sent me.' He was dark complexion but Christ is light complexion, it could not have been Christ. I saw the Spirit of God at home, it said, 'Jump through the window,' and I went through like an arrow. The devil threw me out of the window and my right side belonged to the devil after that." Another time patient said: "Well, are you satisfied? I got satisfied with that blanket when it struck that shoulder all right." Pounded with his elbow and said: "Do you hear me hammer? Do you hear bees swarming? Did you ever hear any humming? Do you hear that drum? That is nothing, don't be surprised to hear that." Remained quiet and then muttered: "Don't breathe a prayer, boys,—pray that I can go home. You never saw anybody that couldn't cry did you?" Assumed a listening attitude and with one hand raised, whispered: "All right, that is all right," and muttered to self.

Hallucinatory Trend.—Allo-psychic in character. He heard the voice of God, felt God and the devil throw him out of the window; saw fire around him; thought the lake was on fire; saw fire on the wall in the ward. Also saw God, Christ, smoke, spirits, bright lights, etc. The hallucinations were marked and embraced all the senses with the exception possibly of the sense of smell and taste.

Manner, Impulses and Compulses.—Had an impulse to jump through the window in response to probable auditory hallucinations as a command of God; also had a compulse to pray at odd hours and seasons, to try to make a horse jump through a window and to perform other unusual acts.

Retention.—Is good for recent, immediate, and remote past so far as can be ascertained.

Memory.—Is good. Show no deterioration of a gross character. He knows all about his former admission to this hospital and can give evidences of school knowledge in his spontaneous conversation, although he will not respond to test questions, etc., readily, when in a disturbed condition, but in the intervals of improvement he displays evidences of very fair education and no gross deterioration.

Reading, Writing, Paraphrasing, and Calculation.—Are all good during the improved intervals. Patient will not cooperate when he is disturbed.

Reason, Logic, and Judgment.—All in abeyance as a result of marked delusions and vivid hallucinations, when in an actively disturbed condition, but returned quickly to a normal state upon the disappearance of delusions and hallucinations.

Orientation.—Fair for time, place, and persons all through his disturbed state, but he would not cooperate at times, due to resistiveness and periods of mutism.

Insight.—Says he was never actually insane but people made him out insane, and during disturbed periods shows a persecutory trend in this connection. During his improved periods he realizes that he was not normal.

Mental Grasp.—On environment is good, although he does not thoroughly reconcile his own commitment.

Physical Examination.—Male, white, height 6 feet 2 inches, of blonde type. No marked physical stigmata beyond a lengthy development of tibia. Expression mobile. Eyes: pupils react to light and accommodation normal. Has refractive errors. Sense of smell and taste normal. Has fracture of left clavicle at the outer third, with old hemorrhagic discoloration. Musculature well developed. Grip equal and good. Passive resistance good. Can perform fine movements. No Romberg.

Reflexes.—Ciliary reflexes equal on both sides. Epigastric, abdominal, and cremasteric all normal. Plantar reflex absent. Knee-jerks diminished on both sides, particularly left. Elbow-jerk and wrist-jerk both diminished. No marked degenerative lesions.

Etiology.—Heredity. Predisposing cause, overwork on farm. Slight toxic (alcoholic) element.

L. J. H., No. 10,002.—A psychosis occurring in a male, white, age 19, nat. U. S., single, occupation farmer. Admitted to W. S. H., November 1, 1904.

F. H.—Mat. grandmother died of cancer of the breast, aged 85 years. Mat. grandfather, aged 38, was killed by a train. Pat. grandparents died at advanced age, cause unknown. Three pat. uncles living, one a farmer, the other two old soldiers unable to work. Two mat. aunts died of tuberculosis. Five mat. aunts living. Two mat. uncles died of heart disease. Mother robust and healthy, aged 65; had 13 children, 12 living, one died of pleurisy aged 21. No miscarriages or abortions. Father living at the present time. Contracted chronic bronchitis during Civil War. Was always nervous and eccentric in his conduct, and at present, aged 65, remains in bed much of the time and is considered demented. Seven brothers of the patient now living and normal. Four sisters living: three normal, and one, Sarah, committed to W. S. H. five years ago, discharged later and obtained a divorce from her husband, remarried, and has five children by the second marriage, living and healthy at the present time. One sister, Martha, admitted to W. S. H., November, 1904, and is still a patient here, being a case of manic depressive insanity with marked disturbances at time of onset. No other evidences of tuberculosis, cancer, syphilis, or insanity in the family.

P. H.—Born September 15, 1885, the eleventh child of the family, breast fed 18 weeks. Birth and early development normal so far as known. At seven years had measles, 11 years was vaccinated, at 12 had a fall on the spine, from a fence, and was sick after this accident for two months with cerebro-spinal meningitis; at 17 years had mumps. Began his education at seven, remained in school seven years, was bright, learned readily, although was never particularly intellectually inclined. Began work on a farm and has continued this occupation ever since.

First Admission.—To W. S. H., September 26, 1902. Diagnosed: Acute mania, and discharged, January 13, 1903, as recovered.

At this time patient was disturbed, spontaneously productive, coprolalia, talked on religious subjects, complained of persecutory ideas and was erratic in conduct. Allo-psychic delusions of persecution with allo-psychic hallucinations of sight and hearing and somatic delusions. Showed a very considerable degree of emotional indifference at that time.

After discharge patient returned to his home, worked regularly on the farm, but eventually became sullen, morose, and threatening. In March, 1904, he drove his brothers from their houses, threatening their lives as a reaction to allo-psychic delusions of persecution.

Second Admission.—To W. S. H., April 1, 1904. Showed greatly lowered emotional tone, sullen in demeanor, fairly quiet and orderly in conduct, and presented a psychosis characterized by allo-psychic hallucinations of sight and hearing, subject to disturbed periods as a response to such delusions and hallucinations, at which time he was violent, homicidal, exhibited impulses, and his general mentation was of a purposeless and silly

character on abstract themes preaching reform, temperance, etc., wished to aid the Czar in the war with the Japanese. No amnesia. Mental grasp poor. Emotional tone of great indifference. Diagnosis: Manic Depressive Insanity. Discharged September 12, 1904, recovered. The patient returned home and showed no mental abnormalities until the latter part of October, 1904.

Recent Onset.—October 20, 1904, he suddenly became much disturbed, homicidal and destructive, broke the furniture, assaulted all around him, tore clothing to pieces, stated that the Irish and Catholics were after him. Expressed the idea that he was God, that he made the earth and that he had all to do with heaven, that all the Yankees were going to heaven and the Irish and Catholics were going to hell. Said he was going to kill all the Democrats because they were Irish; said he was married and had children (which is untrue), was greatly depressed at periods, exhibited mutism, resistiveness to the extent of negativism.

Third Admission.—To W. S. H., November 1, 1904. General attitude that of grandeur and elation with secondary homicidal ideation, threatening everybody indiscriminately and displaying entire lack of judgment, logic and reason, etc. Manner: boisterous and violent and assaulting. Delusions of grandiose persecutory type, with probable incoherent hallucinations of sight and hearing. Memory good. Emotional tone, greatly lowered, did not react to hospital routine well.

MENTAL STATUS.—*Attitude.*—Variable, at times childishly grandiose and elated, at others depressed and indifferent and exhibiting mutism. At other times will answer questions, but in an irrelevant manner and making evident fabrications, and displaying entire lack of appreciation of the gravity of his statements.

Manner.—Variable. At times restless, agitated and threatening; at others is quiet and listless, expressing great depression; at others he feigns sleep and smiles in a foolish way when addressed, winks one eye, stares at one spot for minutes at a time, thus displaying mannerisms, poses, etc.

Attention.—Easily obtained usually, but patient at times will feign sleep, remain mute, and at such times his attention is very difficult to obtain.

Retention.—Good. Able to give events of recent and remote past. Remembers test phrases well, remembers the names of the attendants and physicians after several months interval. Memory apparently very good and is not impaired. No evidences of amnesia present. No aphasic or agraphic symptoms. present. No retardation. Mental grasp good for environment, present, recent, and remote past. Says he knows he is in Willard, says insane patients are here; that he is insane, because if he were not insane he would not be here; says that when he calls himself a Jap he knows that he is a lunatic, shows great indifference to the gravity of such a statement; says that he is a lunatic and is going to be the worst lunatic we have ever had here and "wished to be strapped down" on that account.

Orientation.—Perfect for persons and place. Imperfect for time.

Delusions.—Chiefly auto-psychic in type of a grandiose silly character, with persecutory ideation. Says: "I am a Jap—am a full-blooded Jap—I am one because the United States never did anything for me—my nation never walked up before me and took their medicine."

Hallucinations.—It is probable that patient suffered from hallucinations of sight and hearing, but none can be elicited at the present time. As a reaction to his grandiose delusions the patient becomes violent, at times assaulting those around him, tearing the bed and bedding to pieces and stating as an explanation of such conduct, that he is the worst lunatic we have had.

Mannerisms.—Will lie on the floor on his face and refuse to move, will render his body flaccid and not help himself to eat or to be fed. At other times is resistive to the point of negativism.

Poses.—Rolls his eyes, makes grimaces, stares at people, attempting to hypnotize them, etc.

Reading, Writing, and Calculation.—He is able to do all of these in an elementary manner when he can be induced to do so. Shows that he comprehends the nature of the article read. Is able to do arithmetical problems.

Judgment and Logic.—Greatly impaired; unable to make proper deductions. Rejoices in the fact that he is considered a lunatic; that he wishes to kill people, but does not display any interest in the matter, except in a childish way.

Emotional Tone.—Is of marked indifference and greatly lowered from the normal and is one of the most prominent symptoms in this case.

Physical Examination.—Male, white, height 6 feet 2 inches. Weight 156 pounds, usual weight 180 pounds. Skin moist, cold, and clammy.

Stigmata.—High-arched palate. Microcephalic. Hair low on forehead, brow is low. Ears show thin helix and the patient is unusually tall for a boy 19 years of age. Hair dark brown and full. Face somewhat asymmetrical and shows some anæmia. Muscles of expression react equally and symmetrically. Hearing good. Smell normal, is able to tell test substances when he can be induced to do so. Taste normal. Cutaneous sensibility: no girdle sensation, no formication, no areas of anesthesia or hyperesthesia. The sensorium in general seems to be normal. Sensation to pain somewhat blunted, also stands considerable degree of heat when applied.

Chest.—Elongated and hyper-resonant over the whole anterior surface. Impairment of resonance at the right supra-clavicular region; slight bronchophony on the right side, with prolonged expiration. Coarse rales, probably due to constant disturbed condition of the patient, with laryngitis.

Heart.—No organic or heamic murmurs. Second aortic sound at second right interspace somewhat accentuated. Pulse, 76, regular, rhythmic, volume good, tension low and rather easily compressed.

Abdomen.—Liver area normal, no costal tenderness. Spleen: a trifle enlarged. Genitals normal. Arms and legs, negative.

Motor Functions.—Musculature well developed. No diminution of grip shown. Passive resistance good. No Romberg. No tremors of any marked character.

Nervous System.—K. J. diminished on both sides. Superficial reflexes diminished slightly. Organic reflexes normal, but neglected. Ciliary reflexes react normally to light and accommodation. No evidences of gross degeneration of any nervous tract or any organic brain lesion.

Etiology.—Heredity and overwork.

L. H., No. 10,201.—A psychosis occurring in a male, white, single, age 24, nat. U. S., occupation farmer. Brother to the previous case, No. 10,002. Admitted to W. S. H, January 21, 1905.

F. H.—See family history of No. 10,002.

P. H.—Born November 1880, at Bath, N. Y. Birth normal, and developed well. Measles and whooping cough at age of 12, typhoid fever aged 21; recoveries uneventful. Began to attend district school at the age of eight, attended only two months a year to the age of 21, when he reached the sixth grade. Always worked on the farm in the summer time and later worked as a butcher and barber in Dundee. Joined the Methodist Church in 1902 and displayed considerable religious enthusiasm. At the time he was caring for his brother, Leon, who was later committed to this hospital.

Onset.—Sudden. Patient had jaundice in the summer of 1904 and intermittent fever in November, 1904. His recovery was only partial from this illness, and while he was much reduced physically he began to work hard on the farm as soon as he was out. January 1, 1905, patient stated that he felt as if he was paralyzed and unable to walk, although he could still move his limbs. He felt a great numbness in his extremities; would go to sleep easily, lacked all ambition and felt apprehensive concerning his future. Shortly before admission he became disturbed, talking volubly about overthrowing Sunday railroad work, and that he was interested in numerous horse trades. While waiting commitment in jail, developed religious ideas and preached constantly to those about him.

On Admission.—In general was elated, boisterous in manner, eccentric in conduct. Orientation perfect. Insight defective. Memory good. Showed spontaneous production with prolixity and expansive ideas concerning religion and horse trading, but did not exhibit a typical flight of ideas nor was he particularly distractible. He reacted well to hospital routine.

MENTAL STATUS.—Attitude.—Elated. At times exalted.

Manner.—Boisterous and erratic. Insisted on preaching, gesticulating, climbing up the doors and conducting himself in a very eccentric manner.

Attention.—Good, but shows mild distractibility.

Retention.—Good; he is able to tell about his trip; remembers test numbers perfectly; relates assisting with another patient on the trip here and

can give all the details connected with his life and the events associated with the commitment of his brother and sister.

Orientation.—Perfect. Knows where he is; states that he supposed he is here because he is nervous. He knows the attendants and doctors from having visited the hospital formerly.

Mental Grasp.—Good. Knew he was coming to W. S. H. and realized that when he found himself confined in jail in Dundee; he knew that it was for the purpose of commitment, etc.

Emotional Tone.—Indifferent.

Insight.—Is probably perfect. Patient realizes that his brother and sister are insane, and also realizes the absurdity of his former ideas and actions, but he is reluctant to acknowledge himself insane; stating that he believes that he was only nervous following his attack of intermittent fever. It is therefore probable that, while he is reluctant to acknowledge it, his insight is really perfect.

Memory.—Good, and shows no defect whatever. He is able to give a perfect history of himself, his experiences at school, etc., general school knowledge with a history of his trip here. He is able to give test numbers, dates, etc., rapidly and without hesitation.

Reading, Paraphrasing, and Calculation.—All good, considering his limited education.

Deterioration.—None shown of gross character.

Delusions.—States that he was sent by God to convert man; that he was able to read the Bible in the dark from a divine light over his head, and that he could walk around in the dark in his cell and avoid obstacles, which other men could not. Said: "I am going to convert all of those poor fellows; they want me to read the Bible to them; they come to me; I am the worker of Jesus Christ; millions of men will be converted," etc.

Illusions.—He saw electric lights and thought they were divinely illuminated lights, which he interpreted as divine messages, and he would thereupon begin to preach, believing that he received a divine inspiration in this way.

Hallucinations.—Aural: God's voice, also His thoughts appear to talk to him. Visual: He saw a divinely illuminated Bible in front of him, which he could read in the dark; he could see all parts of his cell by a divine light which appeared to be over his head. Taste and smell: Apparently negative. Tactile doubtful; stated that he had periods when he felt extremely hot or cold without apparent cause.

Physical Examination.—Male, white, aged 24 years, well developed. Hair dark and full. Complexion good. Expression mobile. Eyes hazel, slight conjunctivitis. Eyes react well to light and accommodation, but has some eye strain. Nose, normal. Sense of smell good. Mouth, normal; teeth, fairly good; taste, normal, recognized all taste test substances. Ears, hearing rather acute. Stated that the right ear had an abscess in 1895, caused by a bed bug in ear which remained for two years. The abscess finally broke and he was unconscious for 42 hours following this. This

would seem to indicate some meningeal or brain pressure symptoms; the eventual recovery, however, seemed uneventful. Skin, old, macular rash which itches, said to have appeared shortly before admission to this hospital and which is now disappearing. No history of syphilis or other genito-urinary diseases found.

Chest.—Lungs normal; shows some laryngitis due to constant talking.

Heart.—Normal. Pulse 74-76-90, arhythmic, irregular, volume good. Tension, medium and easily compressible. No arteriosclerosis.

Abdomen.—Shows slight enlargement of the liver upwards, but no costal tenderness. Spleen is somewhat enlarged. Stomach and intestines normal. Bowels constipated.

Arms and Legs.—Negative.

Nervous System.—K. J. exaggerated, left more than the right. Slight elbow jerk; no wrist jerk. Ciliary reflexes normal. Cremasteric reflexes normal. Other superficial reflexes normal. Organic reflexes normal. No symptoms showing organic lesions of the nervous system.

Muscular System.—Shows no tremor. Tongue shows no deviation and has no coarse nor fine tremor. He is able to stand well and shows no Romberg.

Etiology.—Heredity. Contributory causes, exhaustion following intermittent fever, with worry over sister and brother's alienation (stress).

M. T., No. 10,690.—A psychosis occurring in a male, age 17, twice previously a patient in this hospital, single, common school education, occupation farm laborer. Admitted last to W. S. H. September 18, 1905.

F. H.—On mat. side there is no history of nervous disease. Mother living and in good health. On pat. side, one aunt insane, died in this hospital four or five years ago. Another aunt was insane, cared for at home. Family on pat. side as a whole, nervous and peculiar. Father living, in excellent physical health, but suffering from some form of mental disease and cared for in the county almshouse. There are two other children in the family, a brother and sister, and so far as known they are bright and normal in every respect.

P. H.—Born in Rushford, N. Y., February 22, 1888. Instruments were used and mother was very sick at the time. He was a normal child, enjoyed good health, but was said to have been rather nervous. He attended school until the age of 14, was a good student and well liked by his teachers and those who knew him. Since this time he has been working as a farm laborer, when not confined in this hospital. In the spring of 1902 he was struck on the head with a stone, receiving a scalp wound, following which time he has complained of more or less headache.

First Admission.—August 21, 1903. The history indicates that for about a year prior to this time he had been observed to be very quiet, with other periods during which he became extremely talkative. Active symptoms presented themselves ten days prior to his commitment. He became elated, very talkative, boastful, profane and restless, expressed ideas of a grandiose

nature, performed various erratic acts. Was well oriented. Complained of the cruel treatment that he had undergone at the hands of his cousin; admitted most of the alleged insane acts as done by him. Became quiet and well-behaved until September 1, 1903, at which time he became mildly excited, talkative, restless, which continued to increase in severity until he was talking constantly, uttering a constant stream of profanity; was extremely restless, addressing his conversation to the wall at times, and would repeat phrases over and over again. This lasted until October 10, 1903, when he became quieter, though still retaining his ideas of persecution. These became less distinct gradually, and on January 8, 1904, he was discharged to the care of his mother, as improved. He continued in good health until about May 15, 1904, although it was noticed prior to this time that he was inclined to drive the horses excessively fast. His father was taken to the almshouse about this time, which upset him and he became excited, profane, abusive, mischievous, and was again admitted to this hospital.

Second Admission.—May, 1904. Was emotional, complained bitterly of mother and brother, conversation coherent, showing no flight or distractibility, was well oriented. Showed good mental grasp and fair school knowledge. Calculation was only fair. Judgment at fault. Retention fair. General mental attitude was one of depression, with ideas of persecution by his mother, one of his brothers, and also by the man he worked for. Was emotional, cried easily. Admitted some of the things he had been accused of and tried to explain all of his mischievous actions. For a time patient was very mischievous on the ward; was at all times somewhat depressed. Showed a gradual improvement, and on August 30, 1904, was noted as being much quieter and as having dropped the ideas of persecution. He continued in good mental condition and on April 29, 1905, was discharged as recovered after thirty days parole.

Present Attack.—Began August 15, 1905. Had been working on his uncle's farm and, the neighbors state, working exceptionally hard. He seemed normal in every respect until the outbreak of the present attack, when he became somewhat depressed. Ideas of persecution became prominent, uncle misused and persecuted him. He left his uncle and hired out in various other places, always complaining of persecutions, after having been in a place a short time. He became more excited, began running around the town from store to store trying to buy everything he saw, and was finally put in the village lockup for safe keeping, where he continued excited, abusive, profane, talked incessantly and was more or less incoherent in his conversation.

Third Admission.—September, 1905.

MENTAL STATUS.—Quite distractible, showed a tendency to atypical flight of ideas; still expressed in a rambling manner the persecutory ideas that he had, and emphasized the points in his conversation with numerous gestures.

Orientation.—Good.

Mental Grasp.—On events of the immediate and remote past good, being able to give a good account of his former admissions here and showing good memory for events during that time.

School Knowledge and General Experience.—Is only fair.

Calculation.—Was rather poor and he seemed to have considerable difficulty in doing simple problems in arithmetic.

Reading.—Fairly good. Gives the substance of the article read. Writes his name and address, etc., well.

General Mental Attitude.—Is characterized by excitement, talkativeness, inclination to ramble in his conversation. Was decidedly distractible at the time of his admission and for two or three days afterwards. Seemed to approach a flight of ideas at this time with ideation of persecutory nature scattered throughout his spontaneous conversation. Ideas were not fixed and at times were expressed in vague meaningless terms. The following sample illustrates the above: What about the trouble you had with your relatives? "I can't get along with my relatives; it was just my relatives; it was told that they wanted to be flagged around and if there is any deal to be done, I said, I will be flagged. If you have to be flagged on the railroad, Fred said, we can send a flag around; they won't run over you. I guess there was witnesses there for either side. I don't have to be hit I said, I will go, out in the road first; I won't be licked; none of my relatives dare hit me, I said, I will go out in the road first. I guess I can make a showing too if they say too much. Oh, they were all kind of dealing with me, but may be they got sorry afterwards. They said I could go around in automobiles; you don't really have to work around here; I never hurt him; I can hit you and never hit anybody. A, B, C, that would be a beginning. I asked protection from you and he said you will get State protection this time."

Emotional Tone.—Indifferent.

The patient was greatly reduced physically having lost some 30 pounds, but began to gain rapidly after his admission, averaging nearly a pound a day. With the gain in flesh there was a decided diminution of the excitability. He became more quiet and less distractible.

Physical Examination.—Complains of an occasional headache. The conjunctiva was somewhat congested. Reflexes were somewhat slow and examination in all other respects negative.

Etiology.—Predisposing cause, heredity. Exciting cause, overwork.

H. M. T., No. 10,074. A psychosis occurring in a male white, single, age 20, nat. U. S., occupation farm laborer. First admitted July 8, 1904.

F. H.—Pat. grandfather died at the age of 70 of cerebral apoplexy, had been insane for several years. Pat. great-grandfather died of tuberculosis. One aunt on pat. side was insane and died in Willard of tuberculosis. One brother died of acute articular rheumatism.

P. H.—Early history and development negative; was not particularly bright; received a common school education and assisted father at farm

work. Was always sociable, ambitious and even-tempered; alcoholic to some extent; smoked cigarettes to excess after age of 18. Had the usual diseases of childhood, suffered an attack of pneumonia in 1899, and on April 8, 1904, was struck by a heavy board, inflicting a severe contusion on the right side of scalp; was unconscious for sometime, then dazed for a day or two; had vertigo and severe headaches afterwards.

Onset.—Patient became intoxicated April 1, 1904. Played a "nickle in the slot" machine and lost \$36, then forged his father's name as endorsement on back of checks for that amount to make good the loss. After receiving the injury, April 8, he was dazed for several days, remained confused and unable to apply himself to work. On April 14 became excited, imagined that officers were going to arrest him and confessed the forgery. Had marked insomnia from time of the injury. Appetite very poor, wandered away from the house at night; thought he was pursued by officers who wished to shoot him. About May 1 began developing the delusion that his father, mother, and brothers were devils and concealed rocks and butcher knives with homicidal intent; did many ridiculous things, such as chasing a rooster with a butcher knife, thinking that if he killed the bird he would recover; thought that he was hypnotized by various people; that poison was placed in the food; had fearful dreams of combats with snakes; had active hallucinations of sight and hearing; heard the voice of God talking with him; imagined that he visited heaven, etc.

MENTAL STATUS.—Attitude and Manner.—Patient was fairly quiet and composed, at first inclined to be courteous and polite in a somewhat diffident way, responding to questions readily, then without an apparent reason is apt to become gruff, insolent, vulgar, and insulting in manner; complains of various things here, but really is quite contented and does not show any desire to return home. Says this is States Prison; that it sometimes seems to him like the "infernal regions."

Delusional Trend.—Retains the delusions present while at home, and in addition believes that his relatives have been here to visit him; that another patient on the ward is his brother, although greatly altered in appearance; claims that he has been mutilated by the attendants. Says he frequently visits heaven; that he has seen all of his relatives there; claims that he is hypnotized and deprived of his physical strength and power of speech; that he has been placed in a trance; that he is persecuted with poison and electricity.

Hallucinatory Trend.—Has many hallucinations of sight and hearing, as evidenced by his delusions; sees the Lord, hears him talking with him; has visions of heaven, angels, etc.; the dead rise up and talk with him. Has hallucinations of smell and taste as well as hallucinations or illusions of general sensation, from which he develops persecutory ideas, regarding electricity, hypnotism, etc.

Attention.—Variable. Sometimes good at other times patient is apathetic.

Retention.—Considerably impaired.

Orientation.—Good for location, fair for dates, defective for personal knowledge. At times appears very faulty in orientation, owing to indifference and mendacity.

Mental Grasp.—Fair, but influenced by delusions.

Calculation.—Good for simple computation.

Reading.—Reads fluently but does not retain well.

Writing.—Writes readily. Sentences are poorly formed, rarely finished, and the result is quite incoherent.

Spontaneous Speech.—Clear and distinct, except when patient becomes apathetic, then is apt to mumble.

Emotional Tone.—Indifferent.

Judgment.—Very defective.

Insight.—Defective. Does not believe he is insane.

Physical Examination.—Above medium height, erect and well developed, of dark complexion. Head small and narrow. Nose broad and deflected to the left. Many small scars on hands, arms, and chest.

Nervous System.—Patient denies all abnormal sensations, said he had headache, vertigo, etc., after injury to his head.

Eyes.—Show slight nystagmus and considerable vacillation at times.

Ears.—Imperfectly developed. Lobules imperfect.

Cutaneous Sensibility.—Negative.

Vaso-motor Functions.—Considerable cyanosis of hands and feet, slight of fingers and lips. Moderate dermatographia present.

Muscular System.—Well developed and firm; patient has unusual muscular strength, under good control when attention can be secured. Gait slightly unsteady. Fatigue (time) limit of muscles prolonged.

Reflexes.—Deep reflexes in upper extremities slightly increased, those of lower extremities moderately increased and quick in response. Superficial reflexes diminished. Has marked insomnia but has slept fairly since admission.

During the remainder of the patient's stay in this hospital he was, for the most part, elated, very active, seemed to believe that he was capable of licking everybody in the place and was disposed to bully other patients and attendants about him. He was rather effusive and silly in manner toward the ward physician. January 17, 1905, he began to show considerable appreciation and insight and realized that his ideas were false. On March 8, 1905, was paroled to the care of his father and thirty days later was discharged recovered.

Later Onset.—After his return home he worked regularly with his father and maintained a very good mental and physical condition until about June 1, 1905. About this time he was working very hard, pressing hay, and about June 5 was somewhat overcome with the heat. He was observed to act strangely; sat on the stoop with his eyes fixed on the floor and cried when asked what ailed him. He became sleepless, showed loss of appetite and failed considerably in strength. He would have to be asked over and over again before he would reply to a question.

June 15 sent a drawing of a potato coverer to the patent office in Washington. The reply he received he interpreted to be an offer of thousands of dollars for his interest. Said he was going to kill a man in Whitesville for stealing his patent. He collected in his trunk large numbers of cobblestones, which he said were diamonds worth millions of dollars. These he kept securely locked. Said he owned all the railroads in the country and had patented the first cars in use. Carried in his pocket a check for twenty-five billion dollars, which he tried to have cashed at various stores. Showed mottoes and drawings, which he said were of phonographs and other talking machines. Said that his father was his enemy and threatened to kill him as well as various of the neighbors. His manner was flippant and bullying; realized that people were afraid of him; would walk into stores and help himself to cigars, tobacco, etc., thanking the storekeeper very courteously, but not offering to pay. He became very untidy in his personal appearance, used tobacco to excess and exhibited considerable violence if interfered with in any way. He drank large quantities of water, saying that he was burning up inside.

Second Admission.—July 23, 1905.

MENTAL STATUS.—Attitude and Manner.—He went quietly to bed, offered no resistance to bathing and nursing. His eyes were bright, expression elated and alert.

Orientation.—Seemed well oriented for time, place, and persons, and gave a good account of his recent experiences.

Mental Grasp.—He said that he had left at home a trunk full of valuable stones. He had on his person a bottle containing some pieces of charcoal, which he said were valuable gems. When questioned as to his conduct at home he replied that the people were afraid of him and that he had to bother them a little. He talked freely, was very profane in his replies, which were nevertheless usually relevant.

Reason, Logic, and Judgment.—In abeyance.

Emotional Trend and Mood.—For several days was despondent, sullen, and disinclined to talk, on other days was very talkative, jocular, and active. When his diamonds were referred to he would laugh in a silly manner and half acknowledge that his ideas concerning them were false, but insisted that he had made some very important and profitable investments. He showed considerable distractibility. When a watch was shown he said, "Let me see your watch." When another patient said, "We are going to glory," he spoke up at once and said, "I guess so."

Delusional Trend and Spontaneous Production.—He is almost constantly in motion, gesticulating with his hands, roaming about the ward and at all times talking. He destroys his clothing, wets and soils himself at night, and has occasionally to be tube fed. His expression is alert. His conversation is liberally interspersed with profanity and obscenity. At times it is impossible to understand him, his speech being unintelligible. He replies to questions in a flippant, disconnected and sometimes irrelevant manner, seeming rather distracted by the question and indisposed to make

a direct answer to it. "We are right where we are. If you want to be taken there. If you want to lie down, there are the springs" (pointing to the bed in the room). When a watch is shown him he says: "Yes; wind me up." A key shown him and he says: "I don't want you—keys." "Go back where I was shot." It is impossible to test accurately his sensorium as his replies to questions are very flippant and never absolutely relevant.

Insight.—Asked if he is insane, will not make a relevant reply.

Hallucinatory Trend.—Not prominent.

Physical Examination.—Shows nothing different from that at the time of his previous admission and is practically negative, except that he has lost somewhat in flesh.

Etiology.—Heredity. Exciting cause, slight head trauma, and insolation.

A STUDY OF THE NEUROFIBRILS IN DEMENTIA PARALYTICA, DEMENTIA SENILIS, CHRONIC ALCOHOLISM, CEREBRAL LUES AND MICRO-CEPHALIC IDIOCY.

By SOLOMON C. FULLER, M. D.,
Westborough, Mass.

(From the Pathological Laboratory, Westborough Insane Hospital.)

INTRODUCTION.

A great part of the present interest in the neurofibrils of the ganglion cell may be traced to the notable researches of Apathy, who in 1897 made his most important contribution to this subject. Many workers have since then added to our knowledge of these elements of the nervous system, but while we have gained a clearer conception of the anatomical arrangement of the fibrils, of their physiological function there is much undetermined.

Of late, reports of studies upon pathological material from the central nervous system, with reference to the neurofibrils, have begun to make their appearance. These studies have had for their aim, chiefly, the determination of retrograde changes in the fibrils and the relation, if any, such alterations may have to disordered nervous and mental function. The division of opinion which already exists in the interpretation of the findings in pathological material justifies the presentation of this series of cases, all of which, save one, are from groups of psychoses that in their clinical course, not infrequently, present many features in common.

It may not be out of place to mention, that this study was not attempted until preliminary work had been done on normal vertebrate and invertebrate material and material from pathological sources. We would here acknowledge our indebtedness to Prof. Kraepelin for his kind permission to use the facilities of the Munich Psychiatric Clinic, where the most of our preliminary

work was done, and also to Dr. Alzheimer, of the same institution, under whose direction we began the study of the neurofibrils.

The drawings which form the bulk of the illustrations which accompany this paper were made with the aid of an Abbe camera lucida. In every instance a Zeiss 2 mm. apochromatic objective was employed, either in combination with a No. 8, or a No. 12 compensating ocular. The photomicrographs were taken with a Zeiss Series I^a, No. 1 microplanar and a bellows extension of 40 inches. The sections from which the drawings were made had been cut on a freezing microtome at 5 and 10 micra, although in the study of our material 15 micra sections were frequently employed and occasionally a section 20 micra in thickness.

In the review of the literature, only such portions, as seemed to the writer, would serve to give a connected account of the development and present status of our knowledge of the neurofibrils have been noted.

The first reference in the literature to a fibrillary structure of the nervous elements is, perhaps, to be found in Remak's 1838 Berlin dissertation, where the axis cylinder, there designated as the *Primitivband*, is described as containing fine striæ.¹ Prior to the epoch-making researches of Apathy and those of Becker, a fibrillary structure of the elements of the central nervous system, including the ganglion cell, had been advanced by several observers; and had served not only Remak (1), but Lieberkühn (2), Wagener (3), Axman (4), Frommann (5), Beale (6), Deiters (7), and Max Schultze (8) as a subject for investigation. The papers of Remak, Frommann, Deiters and Schultze appear to have greater historical significance, although the work of Beale preceded the three last mentioned.

In 1852, Remak reported² that after vivisection of *Raja batis* and 24 hours fixation of the vertebral column in a weak solution of chromic acid and bichromate, the ganglion cells presented a very regular fibrillary construction. Two layers of fibrils were described, one concentrically arranged about the nucleus and the other coursing from both poles into the axis cylinder.

Frommann (5) in an interesting study, an account of which

¹ Vide Bethe, Allg. Anat. u. Physiol. des Nervensystems, p. 13.

² Loc. cit.

was published in 1864, treated small pieces of the spinal cord of oxen with a dilute solution of egg-albumin, which were then transferred to glycerine and teased and finally pressed between cover glass and slide and examined microscopically. By this method Frommann states, that while the cell-body of most of the cells presented either a glistening or finely granular appearance, in the most of the processes a fibrillary arrangement was very plainly visible. The fibrils from the processes at times could be followed in their course through the cell body, although in this portion of the cell they were less distinct. The fibrils described by Frommann, were closely arranged, of variable length and thickness, whitish in appearance and coursed in a longitudinal or wavy manner nearly parallel to each other. In some of the largest processes 10-17 fibrils were counted and in the smallest 2-5. Many of the fibrils could not be followed over the nucleus, while some, it is claimed, passed through this structure and others could be seen coursing from one process to another. In frozen material treated with nitrate of silver, the cell-body took on a very dark color while its processes were more lightly stained and entirely made up of straightly coursing or wavy fibrils. Fig. 4 of the plate which accompanies Frommann's paper illustrates a silver preparation. In appearance it is much like an incompletely differentiated Cajal or Bielschowsky specimen which has not been treated with the gold bath, and more like the actual neurofibrils than any of the other figures of the older authors which the writer has seen.

Deiters (7) in 1865, from his studies of teased specimens, maintained a similar structure for the nerve cell; for he described fine granular columns passing from the protoplasmic processes into the cell-body.

It was, however, the work of Max Schultze (8) that first attracted any great attention, or won anything like serious consideration from the great body of histologists. The remarkable drawings, which appeared in Stricker's *Handbuch d. Lehre von d. Geweben* and since then often reproduced, are now quite familiar. To the fibrils coursing through the ganglion cell Schultze gave the name of primitive fibrils and held that they were the essential conducting elements of the nervous system. Apathy, Nissl, and Bethe (9) have maintained that Schultze did not see the

actual neurofibrils and that at best, with the technique employed, only a negative of these structures was possible of demonstration.

Kupffer (10) in 1883, was the first to demonstrate in stained specimens the neurofibrillary structure of the axis cylinder in material which had been fixed in osmic acid and colored with acid fuchsin. It is, however, conceded³ that Max Schultze in his osmic acid preparations did demonstrate the unstained neurofibrils in axis cylinders, although failing of this in the body of the ganglion cell.

While Becker (11), and Apathy, as it seems, had previously demonstrated neurofibrils in the ganglion cell, it is the work of Apathy (12) published in 1897 that histologists are most accustomed to consider as the starting point of our present-day conceptions of these structures. The studies of Apathy, made largely upon invertebrate material and his descriptions of the fibrils in the ganglion cells, are too well-known to bear recounting. Further, this work has been recently summarized by Barker (13) and more extensively reviewed by the same author in another place (14).

The method employed by Apathy proved inapplicable to vertebrate material. In 1898 Bethe (15) published a description of the molybdate method which he had devised and by means of which the neurofibrils in the ganglion cells of vertebrates were for the first time successfully demonstrated. The neurofibril arrangement which Bethe described differed somewhat from that given by Apathy, for in the Bethe preparations a net-like arrangement of the fibrils within the cell was not so prominent, indeed failing entirely in many cell-types. This led Bethe (9) to the conclusion that, "die Fibrillen bei den meisten Zellarten glatt durch den Zellkörper hindurchlaufen, ohne in Innern miteinander Verbindungen einzugehen, wie dies bei Wirbellosen in so auffallender Weise geschieht."⁴ Bethe cautions that in determining whether or not a given picture is a true union, only those instances where the fibrils present a forked or Y-shaped appearance should be considered as such, and that X formations should be excluded. With this criterion, aside from the cells of the spinal ganglia and those of the *lobus electricus* of Torpedo, the basal portion of Purkinje cells and the cells of Ammon's horn, Bethe could

³ Bethe (9), loc. cit., p. 44.

⁴ L. c., p. 56.

not demonstrate that the fibrils formed a true anastomosis. Like Max Schultze this observer considers the neurofibrils the conducting elements (*leitende Elemente*) of nervous impulses.

It so happens that, in the silver impregnation of fibrils which have been brought forward as a part of the evidence to controvert the views of Bethe as to the independence of the fibrils, it is often very difficult to determine if one has to deal only with an X-like crossing or a true anastomosis. In Bielschowsky preparations, at least, cells are not uncommon in which straightly coursing or wavy independent fibrils, or, bundles of fibrils, such as are described by Bethe, may be seen. Bielschowsky's (16) Figs. 1, 2 and 4, Fig. 3 of a recent paper of Economo's (17) and our own figures, 1, 2 and 3, are instances of this type. It must be conceded, however, that in applying Bethe's criterion anastomoses or, at least, net-like structures are quite common in the cell-types not included in his list of exceptions.

Paton (18) in 1900, described the appearance of the ganglion cells in the cerebral cortex of pigs which had been treated by a method of his own for the demonstration of neurofibrils. In Fig. 1 which accompanies Paton's paper the fibrils are represented as coursing "straight through the cell processes without being connected with each other, but in the cell body there are connections between the individual fibers, so that a very wide-meshed network is formed." In Fig. 2 of the same paper a network may be seen in the apical dendrite as well as in the cell body.

Ramon y Cajal (19) maintains that all of the neurofibrils as they pass into the cell-body enter into the formation of a network and that this net can also be seen in the processes. Held (20) in a critical review of the question as to independent fibrils, or network, sustains the contention of Cajal, led to this conviction by his studies (Cajal's method) on the ganglion cells of the cord of rabbits and dogs. The figures, 5 and 12-16, which accompany Held's paper are offered in evidence of an anastomosis of the fibrils. By way of reservation, it would seem, is added: "Höchstens lassen sie eine Meinung zu, dass es vielleicht 2 Arten von zentralen Ganglienzellen gebe, solche in denen nur verkreuzte Fibrillen vorhanden sind, und solche, in denen es zur Ausbildung von zusammenhängenden Fibrillennetzen gekommen."

Economo (17), however, in his account of a recent research

upon the ganglion cells of the cord of rabbits, dogs and the shark, where the methods of Cajal, Bethe, Bielschowsky, and Joris were employed, specifically states, that in sections from different levels of the cord which had been treated by the method of Cajal, he was not only able to demonstrate the Cajal network but also independently coursing fibrils in the same cell.

Donnaggio (21) makes use of a molybdate method, not very different from that of Bethe's, and recognizes two types of fibril arrangement, one in which all of the fibrils of a ganglion cell enter into an anastomosis and the other where only a certain number of the fibrils take part in the formation of a network, the remainder coursing independently through the cell. Donnaggio claims that the former type predominates.

Schaffer (22, 23, 24, 25) comes to a similar conclusion as to the anastomosis of the neurofibrils. In a series of papers dealing with the normal appearance of the neurofibrils and the conditions met with in amaurotic idiocy and dementia paralytica, Schaffer has described in detail the net arrangement of the fibrils and the pathological alterations which they undergo.

Dichotomous or twig-like branching of the neurofibrils is also advanced by London (26) in a report of the normal appearance of these elements. This observer differentiates two kinds of fibrils, branched and continuous, and separates the ganglion cells into three groups according to their fibrillary arrangement; viz: twig-like forms (*büschelförmig*), net forms (*netzformige*) and mixed forms (*gemischte*). The first group embraces motor cells of the cord and bulb, the interstitial cells of the bulb, the funicular cells of the cord, the pyramidal cells of the cerebrum and the Purkinje cell of the cerebellum; the second group, the nucleus of the acusticus, the nucleus of the trapezoid body, the olive, the granular layer of the cerebellum and the cells of the spinal and sympathetic ganglia; the third group comprises all remaining ganglion cells.

Jäderholm (27), in a recent comparative study of the results obtained by the methods of Bethe, Cajal, Bielschowsky and Donnaggio, comes to the conclusion that, as a rule, net structures are artefacts, which are brought about through adhesion (*Verklebung*) of the fibrils, further that net-like coagulative material and stained plasma may very closely simulate a network of neurofibrils.

These artificial conditions, according to Jäderholm, are what one finds most frequently in preparations treated after the method of Donnaggio, to a less extent in Cajal specimens and least of all in material handled after the methods of Bielschowsky and Bethe.

Our own studies on the neurofibrils of the ganglion cells of birds, rats, calves, pigs and man in which the methods of Cajal, Bethe and Bielschowsky were used, chiefly the last, do not lead us to quite so sweeping conclusions as those of Jäderholm. Nevertheless, in pathological material at least, certain cell-pictures present themselves with sufficient frequency as to warrant consideration, such for example as our Fig. 4. In comparison with Fig. 5 it will be seen that while both figures present alterations and also exhibit a decided net structure, there is on examination a marked difference in the nets. In Fig. 4 there is seen externally a somewhat broken up net structure of darkly staining granules. Where the meshes of the net are intact they present a fair degree of regularity in shape and size. Beneath the outer net there is another which stains palely and diffusely and the trabeculæ of this inner net are irregular in shape and size and its meshes are occasionally crossed by the trabeculæ of the outer. We look upon this external net as a disintegrating Golgi net. Golgi nets are occasionally encountered in Bielschowsky preparations, but in our cases of dementia paralytica they were almost always found in a state of disintegration. The inner net of Fig. 4 suggests very strongly the net-like coagulative material of Jäderholm, although it is by no means entirely impossible that the picture it presents may not be the equivalent of a disintegrating endocellular net. In support of the view that this is, perhaps, a net of coagulative material the following is offered: Distinct fibrils are nowhere to be made out, not even in the dendritic stump which remains. Generally endocellular fibrils, at least the independent fibrils, appear more vulnerable than those of the processes. Figs. 5, 6, 7, 8, 9 and 10. It would be unusual, from our experience, to have the endocellular fibrils survive those of the apical dendrite. This experience confirms the observation of Marinesco on ganglion cells after section of nerves. (*Vide infra*).

Lugaro (28) arrives at conclusions quite contrary to those of Jäderholm, for he considers the endocellular net arrangement of the fibrils as not only the most frequent but the most normal; and

thinks the method of Donnaggio gives the most faithful reproduction, while those of Bethe and Bielschowsky serve this purpose the least. Lugaro has also maintained in a description of a method of his own for staining the neurofibrils of the axis cylinder (29) that, even in this structure the fibrils enter into the formation of a well-defined network, the meshes of which form sharply pointed angles.

Joris (30) with his colloid of gold stain recognizes three general types of neurofibril arrangement, (a) *cellules a reseau* in which the fibrils enter into a net formation, (b) *cellules de passage* where all of the fibrils course independently through the cell and finally (c) a group in which a small or large number of the fibrils take part in the formation of a net about the nucleus while the remainder course in bundle formation through the cell.

Marinesco (31) has described in addition to net structures, independently coursing fibrils and van Gehuchten (32) could not in many instances convince himself of the existence of an endocellular net in the pyramidal cells and in the cells of the spinal cord.

Bielschowsky in the first description of his silver impregnation method maintained, as did Bethe, that in the majority of ganglion cells of vertebrates, the fibrils coursed independently through the cell. Later in connection with Brodmann (33) this observer has modified his former views and now recognizes the following cell-types: (a) an isolated fibrillary, (b) a fascicular, (c) a reticular, (d) a mixed and (e) an indefinite form.

Soukhanoff (34) employing the method of Kopsch, observed about the nucleus a network of freely anastomosing filaments of variable size which, however, were separated from the periphery of the cell by a clear layer of protoplasm.

Hence it will be seen that complexity in arrangement of the neurofibrils is well brought out in practically all of the methods employed for demonstrating these elements. If, then, one would attempt a summary of this partial review of the literature, a literature which is fast assuming large proportions, it would seem that (a) straightly coursing and independent fibrils, while not so frequent as at first maintained by Bethe, are present in the ganglion cells of vertebrates, (b) endocellular nets in the sense of Apathy likewise exist in vertebrates and while, perhaps, not forming the

only type, or even the majority as maintained by some, are very common and in all probability as numerous as any of the other types described.

Notwithstanding the advancement in our knowledge of the neurofibrils the physiological function of these elements is perhaps not yet definitely determined. Whether we can consider the neurofibrils as the chief conducting elements of nervous impulse, as advanced particularly by Apathy and Bethe, or just what part, if any, the interfibrillary substance takes in conduction, a contention of Max Wolff (35), is still undecided. The theory of Bielschowsky (36) as to a physio-chemical basis of conduction is certainly comprehensive and appears worthy of consideration. The experiments which are reported by Bethe (9)^{*} are most interesting in their bearing on this question.

As regards the Neurone Concept there are those,—Cajal, Forel, Barker, and others,—who see in all of this neurofibril work nothing which invalidates the Neurone Theory, but rather an anatomical confirmation of the doctrine. On the other hand, Nissl, Held, Bethe, and others appear equally convinced of the untenableness of the anatomical unity of the Neurone. Held (20, 37) and Wolff (38) from their studies of the so-called end feet (*Endfüsse*) have satisfied themselves of the direct continuation of fibrils from cell to cell. This, to be sure, has not gone altogether unchallenged. Indeed, Cajal has published observations upon these same structures which are diametrically opposed to those of Held and Wolff. Mahaim (39) after a study of human and animal material could see in the so-called end feet nothing more than a mere ending in contact. Held, however, in a recent article (37) where the continuity of the neurofibrils is further discussed, supplements his earlier work with an entirely new series of observations. In the summary of this last mentioned paper, Held expresses his convictions in the following manner: "Weder an der inneren Grenze einer Sinneszelle zu ihrer bipolaren Ganglienzelle, noch am centralen Umfang des letzteren Zellelements und dem cellulären Beginn einer centralen Leitungsbahn, oder der Stelle, welche die gleiche Angliederung einer centralen Ganglienzelle an eine zweite vermittelt, existiert der einfache Modus eines blossen Nervenkon-

^{*} Das Wesen der Nervenleitung, loc. cit., pp. 248-328.

taktes. Als besondere Strukturtheile dieser nervösen Zellen, die aber an ihren gegenseitigen Grenzbezirken hindurch treten und dadurch einen multicellulären Charakter erhalten, erscheinen vielmehr Fibrillen, die aus letzterem Grunde als Neurofibrillen im Sinne Apathys angesprochen werden können."

Prentiss (40) in a study of the nervous structures of the frog's palate, particularly of the peripheral networks, incidentally approaches the subject of continuity from a somewhat different direction. As a result of an examination of a number of normal palates of frogs and three series of degeneration experiments upon the same organ, this observer, among other conclusions, comes to the following: "The networks are comparable to the diffuse nervous system of certain invertebrates, and their existence is incompatible with the idea that the nervous system is composed of distinct cellular units."

If to the above is added an extreme view, we then have the somewhat startling contention of Kronthal (41), who claims that the ganglion cells are none other than wander cells of a leucocytic nature which during the period of embryonic development, have invested fibrils that were already formed.

Naturally so characteristic and constant elements of the nervous system, as are the neurofibrils, have since their demonstration led to the hope that light would be thrown not only on some questions of a physiological nature but also on some neuro-pathological problems. Researches dealing with the pathological alterations of the neurofibrils are probably not so numerous as those which have had to do with their normal appearance, nevertheless a fair number of observations have been published. The most of the papers which have appeared seem to show, that while the neurofibrils, as a rule, are more resistive to degenerative factors than other elements of the nerve cell, as for example the Nissl bodies, definite alterations in staining peculiarities and morphology can be demonstrated, with a fair degree of constancy, after experimentally induced lesions and in the natural course of disease. Marinesco (47), however, is of the opinion that the neurofibrils are more sensitive to lesions than are the Nissl bodies.⁹ Cerletti and Sambulini (42) have assumed a sceptical attitude toward the so-called pathological alterations which have been described by various authors and

⁹ Vide infra.

think that deductions based thereon have been premature. Similarly, the recent publication of Lache's (43) on the cadaveric changes which the neurofibrils undergo might arouse some doubt as to the value of the explanation given for many of the pictures seen in pathological material.

Among those who have studied the neurofibril alteration in pathological material may be mentioned Cajal (44, 45), Marin-esco (31, 46, 47), Schaffer (23, 24, 25), Marchand (48), Ballet and Laginel-Lavastine (49), Parhon and Papinian (50), Gentes and Bellot (51), Ludlum (52), Bielschowsky and Brodmann (33), Riva (53), Spielmeyer (54), Straussler (55), Marburg (56), Cerletti and Sambulini (42), and Dagonet (61).

From the cases coming to autopsy since August, 1905, at the Westborough Insane Hospital, the material for this study has been selected. Of the 14 cases here reported, 7 were dementia paralytica, 3 dementia senilis, 1 chronic alcoholism, 2 cerebral lues, and 1 microcephalic idiocy. In each case the areas studied were the same. (Fifteen different blocks of tissue were taken from each hemisphere which corresponded exactly in every case as near as the cerebral configuration would permit.) While the cerebellum, medulla and cord were also studied they have been excluded from this report for the reason that they were not examined in so systematic a manner as was the cerebral cortex. The descriptions of the neurofibrils have been limited to the results won with the Bielschowsky method since in our hands this method affords the most uniform results of the three (Cajal, Bethe, Bielschowsky) which we have employed for the study of neurofibrils in vertebrate material.

In the selection of areas for systematic study of the neurofibrils, the topographical researches upon the cerebral cortex by Vogt (57), Brodmann (58), and those of A. W. Campbell (59) have served as general guides. Thus the following areas have been studied: (a) the pole of the frontal lobe (Campbell's prefrontal type of cortex), (b) first frontal gyrus in the region of the parmesial sulcus (frontal type of cortex), (c) foot of the first frontal gyrus (Campbell's intermediate precentral type of cortex), (d) opercular portion of the third frontal gyrus posterior to the antr. ascending limb of the Sylvian fissure, (e) paracentral lobule, (f)

precentral gyrus just above its supr. genu, (g) precentral gyrus at a point on a level with the beginning of the horizontal ramus of the infr. precentral sulcus, (e, f, g motor type of cortex) (h) post. central gyrus opposite area taken from precentral superiorly, (i) post. central gyrus opposite area taken from precentral inferiorly, (j) the antr. transverse temporal gyrus of Heschl (Campbell's audito-sensory type of cortex), (k) post. gyrus brevis of the insula, (l) supr. parietal gyrus (Campbell's parietal type of cortex), (m) antr. occipital gyrus (Campbell's visuo-psychic cortex), (n) infr. lip of the calcarine fissure immediately posterior to the junction of the parieto-occipital fissure (Campbell's visuo-sensory cortex, Brodmann's *calcarina typus*), (o) hippocampal gyrus immediately posterior to the uncus (olfactory type of cortex). Hence it may be conceded that a reasonable number of areas of the cortex have been studied.

DEMENTIA PARALYTICA GROUP.

In this group of cases, the disease ran more or less typical courses, and the clinical diagnosis was in every case histologically confirmed. In one case the histological lesions were most prominent in the cerebellum, a condition which Alzheimer (6o) points out in his monograph on dementia paralytica as liable to occur. The alterations of the neurofibrils in the cerebral cortex of this case, however, did not differ essentially from the pictures which the remaining cases offered. In three cases there were associated degenerations in the posterior columns of the cord, and in two of these cases the more or less profound alterations in the neurofibrils of that portion of the cortex which forms the posterior lip of the Rolandic fissure, particularly in the large pyramidal cells, seemed, in a way, confirmatory of the contention of A. W. Campbell⁷ for this type of cortex. Our third case with equally pronounced tabetic degenerations, however, presented in the corresponding area on both sides, cells which, in the majority of instances, possessed a fairly normal neurofibril content.

Material from an additional case with tabetic lesions (Fig. 28, a, b, c), was also examined (central convolutions, prefrontal and calcarine cortex), but the material had been conserved in 10 per cent formalin for more than three years. Largely for this reason

⁷ Loc. cit., Chap. IV.

and the insufficient number of areas studied the case has not been included in the group. The neurofibril picture of the ganglion cells and the intercellular fibrils were quite the same, however, as in our seven other cases, and the cortex of the posterior central convolutions showed the most marked alterations.

Abstracts of the clinical and anatomical records of the cases are here appended.

CASE I.—Mr. H., 51 years of age, laborer, was admitted to the Westborough Insane Hospital, October 14, 1904.

The family history, as obtained, is unimportant.

The patient's health from childhood is said to have been good, that is, he had never suffered serious illness. H. did not use alcohol and was considered a good laborer. There was a history of a chancre five years prior to admission. The patient's wife reported that for about two years he had been acting queerly, talking to himself and wandering aimlessly about the streets, and that his memory had been noticeably defective. In July 1904, three months before admission H. is said to have been "overheated" while at work in a hay field, after which he grew worse rapidly.

On admission the patient was fairly well nourished, but presented a displacement of the apex beat to the left and enlargement of the area of cardiac dullness. The pupils were slightly dilated, of equal size, stiff to light and sluggish in their response to accommodation. Tests for taste, smell, pain, and tactile sensibility showed an impairment of these functions. When his eyes were closed the patient could not stand with his heels and toes together without considerable swaying. Coordination tests were poorly done. Both knee-jerks were active and there was a tendency to Babinsky's reflex on the left side. The Achilles, wrist and elbow-jerks could be elicited, cremasteric and abdominal reflexes diminished. The speech was hesitant, stumbling, and accompanied by elision of syllables. Protusion of the tongue showed coarse tremors and considerable jerkiness. When the teeth were shown there was marked tremor of the lips and facial muscles. The patient knew that he was in a hospital and stated that he had come to be treated for heart trouble brought on by sun-stroke a month previous. (This was in October and the supposed sun-stroke had occurred in July.) H. did not know the name of the town, although it was very near his native village. There was some irritability and questions were unsatisfactorily answered. For about ten days the patient was depressed, after which he became exhilarated, claiming to be worth "a lot of property" and gave away farms and wrote, upon scraps of paper, checks for large sums of money which he presented to his fellow patients. Meantime the patient was untidy and restless, a condition which did not vary much up to January, 1905. In April of the same year his mental and physical condition was such that it was necessary to keep him constantly in bed. Trophic sores of the gluteal region now

made their appearance, the speech defect became so marked that it was unintelligible. From this time on, decubitus became more extensive and the patient failed more rapidly. October 4 a left lobar pneumonia developed,—two days later, exitus.

Autopsy, 8 hours, post-mortem.

Anatomical Diagnosis.—Pachymeningitis hæmorrhagica interna, leptomeningitis chronica, atrophy of cerebral convolutions, granulations of the fourth and lateral ventricles, cysts of choroid, atherom. degen. of basilar vessels, general cerebral congestion; congestion of the meninges of the cord, cloudiness of the pia and post. sclerosis; myocarditis, atherom. degeneration of coronaries, ascending and abdominal aorta; left lobar pneumonia, emphysema and t. b.; hepatic congestion; interstitial nephritis; congestion of tail of pancreas; gastritis; cystitis; decubitus and contractures of elbow joints.

CASE II.—Mr. R., age 41, single, clerk, was admitted to the Westborough Insane Hospital, April 17, 1902.

Family History.—Negative.

As a child and young man patient is said to have been healthy and always of a cheerful disposition. Since early manhood R. had been addicted to alcohol, so much so that it was necessary to send him to a Keeley Cure, 8 years prior to his admission to this hospital. The reform, however, was not lasting, for he soon began to drink as much as ever, chiefly whiskey. For three months before his admission the patient had been a total abstainer. During this period R. was out of employment and on this account worried a great deal. Antedating this period, however, some speech defect had been noticed,—common phrases uttered with difficulty and these not always associated with states of alcoholic intoxication. The patient grew more and more despondent until a few days before admission, when he suddenly became exhilarated and developed the idea that he was a great inventor and claimed a large fortune, which he had made by means of his invention.

On admission the patient gave a history of having had gonorrhœa several times, and that at one time he had had a sore on his penis. The left pupil was smaller than the right and both responded sluggishly to light and accommodation. There was impairment of the taste, smell, and tactile sensibility. When the tongue was protruded there were associated coarse tremors and considerable jerkiness. The knee-jerks were diminished, Romberg sign present, and the gait somewhat uncertain and slightly ataxic. The speech was slow and stumbling and there was elision of syllables. When the teeth were shown there was considerable tremor of the lips and facial muscles. Sugar was found in the urine.

Mentally, a sense of well-being was evident, and R. spoke freely of his schemes and a wonderful automatic cooking range and other inventions of his, etc. Memory for recent events was poor, for the gross events of the remote past, fair.

For about six months after admission the patient was mildly euphoric and was able to do a little work about the hospital. In October, 1902, R. was actively disturbed by hallucinations of hearing; he became abusive and obscene in his language, violent, destructive, and generally troublesome, a condition which continued almost without interruption for about a year. In the meanwhile ataxia and speech defect were progressive.

By October, 1903, an incontinence of urine had developed, the knee-jerks had entirely disappeared, the pupils were completely paralyzed to light, and the speech content was unintelligible. This last condition, however, would show transitory periods of improvement.

In October, 1904, epileptiform convulsions, with temp. 101-103 F., made their appearance, and for five days R. had from 1 to 3 such seizures daily. There were congestive attacks again in January and September, 1905, after a series of which the patient died September 10, 1905.

Autopsy 2 hours and 30 minutes, post-mortem.

Anatomical Diagnosis.—Leptomeningitis chronica, granulations of the fourth and lateral ventricles, cysts of the choroid plexus, atrophy of cerebral gyri, congestion of the entire organ; congestion of cord, leptomeningitis and hæmorrhage beneath the spinal pia, sclerosis of post. columns; degen. of myocardium; emphysema, hypostatic pneumonia fatty liver; renal congestion; gastritis.

CASE III.—Mr. T., age 53, divorced, a broker by occupation, was admitted to the Westborough Insane Hospital, March 16, 1905.

Mr. T., for ten days, had been a patient of the McLean Hospital and from that institution was transferred to the Westborough Insane Hospital with the following history: "Family history, negative. The patient in younger days was an active, alert, studious fellow, fond of athletics. He graduated from Harvard in the class of '77 and after that studied both medicine and law, but practiced neither. His business was that of a curb broker.

Fifteen years before admission the patient was married. His married life had been most unfortunate, and two years ago he was divorced.

Six years ago patient had syphilis with stubborn secondary symptoms. Since his divorce patient has been a Bohemian in every sense of the word. He has ever been a non-conformant, critical of established institutions, and studied and read much on religious and sociological questions. He had peculiar ideas about the care of his body, viz., bathing, exercising, etc., and his oddities have for years been the source of jokes and jibes from his friends. A few months before admission these oddities became more marked; though an old man he would run on the streets in abbreviated costume, go through fantastic movements in his room, and expose himself for hours to the sun.

A month before admission at his brother's house he sang college songs the day after the funeral of his brother's child; he made a mess of it, but he thought he was doing finely, praised his wonderful voice, its rhythmic

and symphonic qualities. Ten days ago he took a mop and tried to clean some loose whitewash from the wall. On this wall, so transformed, he saw myriads of beautiful pictures of various kinds,—landscapes, all sorts of flora and fauna imaginable, heads of beautiful women, and their bodies as well. He was extremely happy and said he could sell his pictures for \$100,000 each. During the last year he had lost his grip on business. He made only small deals. No change in his memory has been noted by friends." While at McLean he was contented and happy, except on one or two occasions, when he became violent and attempted to escape. He had no insight into his condition.

On admission to this hospital there was noted, on physical examination, considerable twitching of the muscles about the eyes and mouth, which were more marked in speaking and when the teeth were shown. When the tongue was protruded there was no deviation but there were associated coarse and fine tremors and jerky movements. The speech was hesitant and there was elision of syllables. Test phrases were not only defective phonetically, but on account of profound memory disturbance, very imperfectly reproduced. The pupils were equal and reacted to light and accommodation. The knee-jerks were moderately active, the left less than the right. The same was true of the Achilles reflex. Ankle clonus elicited. There was tremor of the extended fingers, poor station, and coordination tests were badly done.

Mentally the patient was euphoric, spoke of his great wealth and his wonderful abilities as a physician, lawyer, and artist. His physical and mental condition rapidly grew worse. He became more irritable, was noisy, untidy, and destructive. From May 1, 1905, he was confined to bed, extensive decubitus developed soon thereafter. Grandiose fantastic ideas continued and the speech defect grew progressively worse.

January 4, 1906, a right lobar pneumonia developed, and after being unconscious for four hours the patient died.

Autopsy 3 hours, post-mortem.

Anatomical Diagnosis.—Absence of diploe in calvarium, adherent dura leptomeningitis chronica, atrophy of cerebral convolutions, granulations of fourth and lateral ventricles; congestion of meninges of cord; pleuritis, anthracosis, congestion, emphysema, right lobar pneumonia; interstitial splenitis; renal congestion, diffuse nephritis; gastritis; oedema of feet, and extensive decubitus over buttocks and left trochanter.

CASE IV.—Mr. L., age 54, widower, carpenter by occupation, was admitted to the Westborough Insane Hospital, September 9, 1903.

Family History.—Negative.

The patient is said to have been an orderly, industrious, and thrifty person. Five years ago he was kicked on the head by a horse. An indefinite history of fainting spells followed by vomiting is reported. These attacks, of late, were frequently associated with outbursts of anger. About a year before admission it was noted that patient was unusually

irritable and that his speech was stumbling in character and at times incoherent. He was observed almost constantly picking his fingers nails, slept poorly and did not eat well. He spoke several times of "getting through" if the noise in his head did not cease. For some time his memory for recent events had been defective. Contrary to his former habit he became very communicative about his affairs, imagined that his balance at the bank and other property was being attached and complained that he had been spitting up "great balls of black poison known as syphilis."

On admission he was poorly nourished. All superficial arteries were firm and not compressible. Two urethral strictures were noted; patient denied syphilis, but a positive history was later furnished by friends. Pupils were equal and reacted sluggishly to light and accommodation. Coordination movements were poorly carried out, and tests for taste and smell were generally incorrectly responded to. Tactile and pain sensibility were markedly impaired, knee-jerks and plantar reflexes diminished. The palatine arch was high vaulted and narrow. When the tongue was protruded it did not deviate, but it was somewhat jerky and there were coarse tremors and also tremor of the facial muscles when teeth were shown. There was bronchitis with considerable mucopurulent expectoration.

Mentally the patient appeared confused, and the speech was slurring and at times incoherent. Patient, however, stated that he felt "fine."

During his hospital residence of two years and three months there were periods of great bodily prostration, diarrhœa, capillary bronchitis, confusion, and depression. For nearly all of this period the patient was confined to his bed, dying December 15, 1905.

Autopsy 14 hours, post-mortem.

Anatomical Diagnosis.—Absence of diploe in calvarium, leptomeningitis chronica granulations of fourth and lateral ventricles, cysts of choroid plexus, atrophy of gyri, atheromatous degeneration of cerebral vessels, general congestion; congestion of cord and opacity of its pia; interstitial myocarditis, endocarditis chronica, atheroma of aorta; lobar pneumonia; interstitial hepatitis; congestion of spleen; diffuse nephritis.

CASE V.—Mr. W., age 42, divorced, watchmaker by occupation, was admitted to the Westborough Insane Hospital December 8, 1905.

Family History.—Negative.

Of the patient's previous history, as given by friends, there is little worthy of note save that he had been a user of alcohol for a number of years. (Venereal disease was denied but on admission there was found a scar on the inner surface of the prepuce), and that for about a month before admission there had been a very noticeable falling off in W.'s working capacity. For some little time he had been managing so poorly that his business affairs were in a badly muddled state. He evolved various plans for recouping his fortunes, one of which was to open a factory that would turn out 50,000 watches a day, and stated that he had a backing of \$50,000,000 to this end. During this period W. was excitable, restless, and indulged in much obscene talk.

On admission the patient was apparently well nourished. The pupils were equal and sluggish to light and accommodation. The knee-jerks were fairly active, Achilles, wrist, and elbow reflexes could be elicited, superficial reflexes diminished. Station and gait good. The speech was slow and there was slurring of syllables and with it tremor of the facial muscles. When the tongue was protruded it did not deviate from the median line but was accompanied by jerky movements and coarse tremors. Tests showed that taste and smell were normal but pain and tactile sensibility were diminished.

Mentally there was a sense of well-being. W. claimed that he was the only person of his name in the country and that he was also the richest person. He spoke freely of his schemes and of his possession of diamonds and watch factories, and the like.

Until March 6, 1904, except for occasional irritability, he was mildly euphoric and reasonably tractable. After this period the patient became somewhat confused,—did not know where he was, untidy, the speech defect more pronounced, and his delusions more grandiose.

June 6, there was a convulsive seizure of a general character, after which there was unconsciousness for three days, followed by noticeable deterioration of the mental faculties. August 23, there were six epileptiform convulsions rapidly following each other, during which there was twitching of the muscles of the right side of the body. This was followed by a right hemiplegia, which, however, disappeared in three days. September 26, there was another convulsive seizure, in which the convulsions were general, followed by pronounced deterioration.

On March 8 and June 25, 1905, there were seizures followed by right hemiplegia which, also cleared up in a few days. September 12 and December 4 there were series of convulsions of the general type, and in the exhaustion caused by the last he died December 6.

An autopsy of the brain and cord, two and one-half hours, post-mortem, was the extent of the examination permitted.

Anatomical Diagnosis.—Thickening and absence of diploe in calvarium, adherent dura, leptomenigitis, atrophy of cerebral gyri and focal atrophic areas in cerebellar cortex; congestion of cord and cloudiness in its pia.

CASE VI.—Mr. D., age 53, widower, occupation sailor, was admitted to the Westborough Insane Hospital, August 18, 1903.

Of the patient's family history nothing is known.

As a young man D. states that he was always well and that he had a son living, now a man, as the result of his marriage. In January, 1899, the patient was admitted to the Soldiers Home Hospital, and although he was considered mentally somewhat defective, he did not give any trouble until December 4, 1902, when he became noisy, untidy in his habits and had to be kept in his room. Later this condition grew worse and in addition he became violent and destructive.

On admission the patient was poorly nourished, presented an inguinal

hernia and enlarged scrotum. Venereal diseases were denied. The pupils were unequal, did not react to light, but responded to accommodation. The knee-jerks were absent, he could not stand with his heels and toes together and eyes closed without considerable swaying, and not at all on one leg. Taste and smell sensibility were good but impaired for pain and touch, especially over the lower extremities and trunk. The gait was ataxic. The speech was slow and there was elision of syllables. When the teeth were shown there was tremor of the facial muscles and the tongue when protruded was accompanied by jerky movements.

Mentally the patient was exhilarated, talked about giving away millions, stated that he was not insane, that he had been but now he was "all right." Memory for some of the gross remote and recent events of his life was fair but on the whole generally hazy.

During the patient's subsequent history he complained from time to time of lancinating pains in his lower extremities, was mildly euphoric until just before the end, when he gave up his ideas of wealth. Ataxia was progressive and incontinence of urine and feces was always present. The patient died March 15, after a residence of two years and seven months.

Autopsy 6½ hours, post-mortem.

Anatomical Diagnosis.—Increased thickness of calvarium and disappearance of its diploe, adherent dura, cerebral congestion, hydrocephalus ex-vacuo, opacity of pia, granulations of fourth ventricle, dilation of antr. cornu of left lateral ventricle, atheroma of basal vessels; congestion of cord, pial opacity, post. sclerosis; degen. of myocardium, endocarditis atheroma of ascending aorta; hypostatic congestion of lungs; chronic interstitial splenitis; diffuse nephritis; right inguinal hernia; arthritis of the right knee-joint and ulcer of the dorsum of the left foot.

CASE VII.—Mrs. B., age 53, widow, no occupation, was admitted to the Westborough Insane Hospital June 5, 1905.

Of the patient's family history nothing is known.

Only a little information could be obtained of the patient's previous history. For a number of years Mrs. B. had been known to one of the charitable institutions of Boston as a hard-working person who did washing and scrubbing for the support of her herself and an invalid husband. It is said that the patient took alcoholic stimulants occasionally, after which she would become "hysterical." After the death of her husband, two years prior to admission, it is stated that the patient had a nervous break-down, since which time she had done no work, living entirely on a government pension of \$12 a month in a single basement room. A "temporary attack of insanity" is also reported and this is said to have occurred two years prior to admission and to have been brought on by the use of alcoholic liquors. Up to seven years before admission Mrs. B. stated that she had lived a somewhat immoral life, but since then she had been a reputable person. For the year immediately prior to admission she had been known to act queerly and this finally led to her commitment.

On admission the patient presented a fairly well nourished condition, the face, however, was of a pasty appearance. The pupils were dilated, equal, and stiff to light and accommodation. Smell, taste, pain, and tactile sensibility were impaired. The knee-jerks were unequal and exaggerated, left more than the right. Achilles elicited; station poor, gait somewhat unsteady. The speech was stumbling and there was elision of syllables. There was rupture of the perineum and a cystocele presented.

To all questions the patient replied in an irritable and obscene manner so that memory defect or orientation could not be determined. At this time hallucinations or delusions were not evident. The patient was untidy, resisted every effort made to have anything done for her and was inclined to throw things about. This condition continued for about two weeks, when she became less disturbed and more communicative. In the account which she gave of herself at this time she described certain "spells" she had had, which when they came on she was unable to control herself and would become unconscious, but the whole account was somewhat disconnected. She also said that she was a "king and gentlewoman."

The condition of Mrs. B. remained much the same, noisy, untidy, and somewhat resistive until September 4, 1905, when she was seized with convulsions accompanied by temperature from which she did not recover, dying the same day.

Autopsy 48 hours after death.

Anatomical Diagnosis.—Increased thickness of calvarium with absence of diploe, cloudiness of pie with decortication on its removal; atrophy of convolutions and asymmetry of cerebral hemispheres; congestion of brain; general diminished consistence of brain and cord (post-mortem degen.); congestion of trachea; degen. of myocardium, atherom. degen. of ascending aorta; pulmonary congestion congestion of liver; congestion of spleen; diffuse nephritis and cystitis.

To describe in detail the sections from each block of tissue studied would not only make tedious reading but would also extend unnecessarily the length of this article. The description of the histological features, therefore, will be limited to a sort of summary of the findings, or type, for the different areas studied, attention being called, of course, to pronounced deviations from what is considered the type picture for each locality examined in our series of cases.

PRECENTRAL CORTEX.

Lamina zonalis (Brodmann), molecular layer (Meynert), plexiform layer (Campbell).—As a rule, the few ganglion cells found in this layer of the cortex present no fibrils and rarely can their

processes be followed for any great distance from the cell-body. Occasionally, in the horizontally disposed cells of the layer, a rather thick, darkly stained bundle of fibrils clumped together is seen; and sometimes these bundles are fragmented. The cell protoplasm is usually tinged a light brown while the nucleus takes on a darker shade of the same color. The structural appearance of the nucleus is, in instances, homogeneous in character, at other times, on account of the variation in intensity of the staining reaction, coarsely granular.

Pyramidal cells. (Including Meynert's 2d and 3d, Campbell's 2d, 3d, and 4th, Brodmann's II, IIIa and IIIb layers.)—The small and medium size pyramidals offer the most pronounced alterations. Often, one will encounter small and medium size pyramidals which exhibit no fibrils whatever, while in their immediate neighborhood may be seen cells presenting disintegrating neurofibrils, fibrils but slightly altered and, occasionally, other cells with an apparently normal neurofibril content. Paucity of cell processes is marked. The cell-body in the majority of these smaller pyramidals is either diffusely or irregularly stained and, in lieu of fibrils, documented with darkly stained granules of irregular shape and size. The apical dendrite, however, often contains fibrils which sometimes stand out sharply, but for the most part the intense reaction of the fibrils and the interfibrillary substance to the silver impregnation results in a blurred effect of the finer elements of the process. The apical dendrites are often tortuous and present areas of localized œdema, where the fibrils, or bundles of fibrils, are pressed apart and as a result clear white spaces are formed.

When the deeper layers of the cortex are examined one finds that cells with neurofibrils are more common, still the number of cells presenting alterations, or even disappearance of the fibrils, is not small. In the layer of large pyramidals all stages of neurofibril alteration may be observed. Cells which present a fair number of dendrites, clear white nuclei and neurofibrils with dichotomous branchings or a reticulated arrangement may be seen in the immediate vicinity of other cells which exhibit an intense staining and clumping of the fibrils along the periphery, together with localized swellings and fragmentation of the fibrils in other portions of the cell and a nucleus that is sometimes swollen and sometimes shrunken. There will also be encountered large pyramidal

cells in which the neurofibrils while, for the most part, distinct and independent are, however, beaded in appearance. In such cells the nucleus is, generally, palely but diffusely stained, and in which the nucleolus may be made out as a slightly darker stained ring. Fig. 8 represents this type of alteration and we look upon it as an early stage of neurofibril changes. Post-mortem alterations may be reasonably excluded, for the block of tissue, from a section of which this drawing was made, had been placed in the fixative less than three hours after death. (Case V.)

The stellate cells interspersed among the large pyramidal present various stages of alteration, but simulate more closely the changes met with in the medium size pyramidal.

The Betz cells, generally, are well preserved, their nuclei unstained, but a diminution in processes is frequently noted. An endocellular net arrangement of the fibrils in many instances seems indisputable, while in others to contend for more than a reticular plan appears unwarranted. The fascicular arrangement of the fibrils in the large apical dendrite, especially in the pyramidal form of Betz cell, is often well brought out, as may be seen in Fig. 18. Betz cells, however, not infrequently show alterations in the neurofibrils and nucleus. Indeed, Fig. 18 presents very early retrograde changes,—at least the granular disintegration of fibrils in the basilar portion of the cell and the rather pale blotches about the nucleus which is seen as a darkly stained ring, are so interpreted. In Fig. 19, a Betz cell of the multipolar type, we have, evidently, to deal with a more advanced stage of alteration than is the case in Fig. 18. Along the periphery of the cell is seen a bundle of fragmented neurofibrils, in the axis cylinder irregularly stained fibrils which are somewhat beaded, and scattered through the remainder of the cell protoplasm are numerous granules, while the nucleus is eccentrically located, irregularly stained and in portions granular. The network observed in the pigmented area we believe to be nothing more than a network of protoplasm in which the pigment granules are enmeshed.

Lamina multiformis (Brodmann), *layer of fusiform cells* (Meynert), *layer of spindle-shaped cells* (Campbell).—The cells of this layer also present a variety of appearances. There are cells with an endocellular net arrangement of the fibrils and others

in which such an arrangement is not so evident. The cells of the layer are generally well preserved, still there are forms, particularly among the smaller elements, where the fibrils have either undergone a granular disintegration or have altogether disappeared.

POST. CENTRAL CORTEX.

The description already given for the *lamina zonalis* and the small and medium size pyramidal cells of the precentral cortex can also serve for this cortex. As a rule, the large pyramids of both the external and internal layers present fewer dendrites and more advanced alterations in the neurofibrils than in the type of cortex previously described. There are, however, cells which show a normal, or, nearly normal neurofibril content and in these instances the fibril plan is predominantly reticular. In two of the cases of the dementia paralytica group which presented post. column degenerations of the cord, the cells of that portion of the post. central gyrus forming the post. lip of the Rolandic fissure were most profoundly altered. Distinct fibrils were not demonstrable in the large pyramids, particularly fibrils of the independent type. These large cells were in instances considerably shrunken, in other instances somewhat swollen, their protoplasm irregularly colored and contained granules of various sizes arranged in clumps or scattered singly through the cell. In not a few cells where dendrites had been retained small balloonings were observed, such as are indicated at *e* Fig. 10. In other cells, as represented in Fig. 11, poverty of processes was more pronounced, the nucleus shrunken but somewhat globular, darkly stained, and in which a more darkly tinged nucleolus is evident. In the protoplasm of such cells a palely stained and ill defined network is recognizable which, however, stains more intensely along the periphery. Fig. 10 should be compared with Fig. 18 of the antr. central cortex. Both of these figures are from the same cerebral hemisphere (left) and from exactly the same level (upper) and are more or less typical of the neurofibril picture on the opposite sides of the Rolandic fissure, Fig. 10, for the large pyramids of the post. central; Fig. 18 for the Betz cells of the precentral cortex. (See cord sections, Fig. 29 a, b.) Fig. 11 represents a cell from the lower block of post. central cortex

(right) in our second case with tabetic degenerations. In the third case of this group with post. column degenerations the changes in the cortex forming the post. lip of the Rolandic fissure were, comparatively, slight. There were, as in almost every section of the cortex in our cases of paralytic dementia, markedly altered cells, however, Fig. 2 more nearly represents the type of neurofibril preservation, especially for the large pyramidal cells. It will be noted in Fig. 2 that, except for a ballooning at *a* and a slight tinging of the interfibrillary substance, most pronounced in the upper half of the apical dendrite, the cell offers little that can be considered abnormal. Fig. 19 is a Betz cell from the opposite side of the Rolandic fissure of the same hemisphere at the same level as Fig. 2. It should be added that in myeline sheath preparations of the cord of this case, a fading out was noticeable in the pyramidal tracts, but by no means so marked as in the post. columns. Fig. 30 a, b.

PREFRONTAL, FRONTAL AND INTERMEDIATE TYPES OF CORTEX.

In dementia paralytica the usual histological methods of examination, as is well known, show that the degenerative process, in so far as it effects the nervous, glial and mesoblastic tissue elements, is diffuse in character. Nevertheless, aside from the class of cases with focal symptoms and the equally small class with pronounced cerebellar alterations, certain areas like the frontal regions are, commonly, more profoundly altered than other regions. In the frontal regions the cell architecture is apt to be more disturbed, vascular changes, disappearance of nerve fibrils and glia proliferation most marked. In neurofibril preparations the same is true for the mass of our observations in this series of cases in so far as fibril alterations are concerned. However, in one of our cases the most severe alterations in the neurofibrils were found in Campbell's audito-sensory area and in two of the cases with tabetic degenerations cited above, the post. central gyrus on both sides offered changes in every way comparable to the most severe alterations to be found anywhere in the frontal regions studied.

In the frontal and prefrontal regions the small and medium size pyramidals very frequently show no fibrils or processes. These

cells usually contain considerable pigment and a darkly stained granular nucleus which often, is partly or entirely retracted from the protoplasm, thus forming circular or crescent-shaped clear white spaces. The protoplasm of these cells is thickly sprinkled with granules of various sizes which take the stain irregularly. Fig. 14, although representing a small pyramidal from the *pars triangularis* of the 3d frontal gyrus (left) can equally well serve for many of the small and medium size pyramidals of the frontal and prefrontal cortex. The neurofibrils in the large pyramidals also show alterations. In these cells an endocellular net-like structure is commonly observed. In degenerated cells of this type a net structure can be made out for some distance in the processes, as in Fig. 7. In more nearly normal cells, Fig. 19 for example, a net structure in the processes is not so evident. In Fig. 7, one sees that the net is irregularly stained and at its nodal points masses of closely arranged and darkly stained granules may be observed. In the apical dendrite of this figure (7) darkly stained bundles of fibrils are prominent and one of these as it enters the cell-body is forked and, apparently, continuous with the endocellular net. The nucleus is darkly but diffusely stained. Not a few of these large cells, are destitute of fibrils. In the most pronouncedly altered areas, cells are occasionally encountered which present a fairly normal neurofibril content, such as Fig. 15, a large pyramidal from the frontal region (Case V) and Fig. 17, a drawing from the same slide as Fig. 14. (Case VI.) The fibrillary arrangement of the large pyramidals of the opercular portion of the 3d frontal gyrus differs from that described for the prefrontal and frontal areas. It will be noted in Fig. 17 that, in the apical portion of the drawing the fibril plan is somewhat fascicular and to assume for the area about the nucleus, the peripheral and basilar portions a reticular disposition with, perhaps, an occasional anastomosis, is not altogether unwarranted.

From the *lamina multiformis*, two figures are offered, Fig. 5 (intermediate precentral type of cortex) and Fig. 13 (frontal type of cortex). In Fig. 5, a decided net structure is evident. The trabeculae of this net are of irregular thickness, the interfibrillary substance at the base and to the left of the drawing tinged and the nucleus diffusely stained. In Fig. 13 the suspicion that the granular effect of the nucleus may be partially due to silver

precipitate still lingers in the writer's mind. However, the entire cell is rather darkly stained and the intense reaction of the peripheral bundles of the fibrils so commonly noted by various observers is well seen. In the bundle to the left of the drawing, although its elements can not be distinctly made out, the fibrils appear to course directly through the cell without anastomosing with each other.

TEMPORAL, PARIETAL, ANTR. OCCIPITAL, CALCARINE AND OLFACTORY TYPES OF CORTEX

From Campbell's audito-sensory type of cortex, drawings of two large pyramidal cells are offered, Figs. 4 and 9. Without entering into a detailed description of the various cell layers, suffice it to say that the neurofibrils in the ganglion cells of this cortex are, generally, markedly altered and the alterations presented in the large pyramidal cells are among the most profound. In the case from which Fig. 9 was drawn (Case I), the psychosis ran its course in four years, two of which were in hospital and two during which failure had been noticed by friends prior to admission. Clinically speech defect was so marked as to be unintelligible. In the sections from the antr. trans. temp. gyri studied, absence of neurofibrils was marked,—practically all cells presented a condition similar to Fig. 9, or even worse. When sections of the same block from which Fig. 9 was drawn were stained with Herxheimer's fat stain, the small swellings designated by *a*, Fig. 9, were seen to be made up of reddish granules or a red-tinged protoplasm. Fig. 4 is a large pyramidal cell from the corresponding region in Case III, a case which from the clinical history may be considered among the acutely coursing cases of G. P. The fibrillary arrangement for this cortex, as seen in cases where fibrils are well preserved, is of a mixed character, reticulo-fascicular, in the large pyramidal cells. This is also the case in the so-called audito-psychic cortex, as may be seen in Fig. 12, a large pyramidal from the audito-psychic cortex left of Case V.

The parietal, visuo-psychic and olfactory areas studied offer no special changes which have not already been described. The infr. lip of the calcarine fissure (*calcarina typus* of Brodmann, visuo-sensory cortex of Campbell and of Bolton) appears, however, more severely involved with regard to neurofibril alteration

than is the case with the visuo-psychic and other areas just mentioned. Next to the frontal, with exception of the instances cited in the post. central and audito-sensory regions, the neurofibrils in the calcarine cortex show the most advanced alterations.

INTERCELLULAR FIBRILS.

The intercellular fibrils, as a whole, and the appearance they offer in Bielschowsky preparations of the paralytic cortex form one of the most distinguishing diagnostic features which this study of ours has presented. It is, however, only by comparing sections of equal thickness from similar areas in normal brains and others of the so-called organic psychoses that the true character of the intercellular neurofibril alterations in dementia paralytica will be seen. It will then be evident that notwithstanding the apparent wealth of intercellular neurofibrils, a great number of these elements have been destroyed and that the destruction has involved chiefly the finest fibrils, and more particularly those of the outermost layers of the cortex. This then harmonizes with the marked glial proliferation of this area which is presented by a successful Weigert or Benda preparation for glia fibers in the paralytic cortex.

In two cases of dementia paralytica, where the cerebral cortex was studied by the method of Cajal, Marinesco (31) describes localized swellings, intensity of staining, fragmentation and transformation of the neurofibrils into fine granules. Circumscribed granular degenerations of the fibrils of the axis cylinder was often observed by Marinesco, the basilar portions of the cells, however, showed the most pronounced degenerations and the peripheral fibrils stained the most intensely. Marinesco also points out the poverty in cell processes and observes, that the small and medium size pyramidal cells bear the brunt of the retrograde changes.

From a study of several areas of the cerebral cortex of the cerebellum, medulla and cord in three cases of dementia paralytica, Dagonet (61) reports the neurofibrils intact, extra cellular as well as intracellular fibrils and that this was also true even in those areas which by other histological methods showed the most advanced lesions. Dagonet therefore concluded that, since the neurofibrils remained unaltered in areas which by other methods were markedly degenerated, the nerve cell could not be a trophic

center. Marinesco has objected to this contention on the ground that it would be singular if nerve cells in which all other structural elements presented pathological changes the neurofibrils should alone remain unaltered. Nissl (62), however, had already pointed out the resistive properties of the neurofibrils and considered the presence in pathological material of an occasional fibril tract which remained intact, in spite of otherwise collective degeneration of the nerve cell, as evidence of their independence from the protoplasm of the cell.

Ballet and Laignel-Lavastine (49) describe fragmentation granular disintegration and rarefaction of the neurofibrils of the small and medium size pyramidal cells with good preservation of similar fibrils in the large pyramidal cells. Our own experience teaches that, unless judgment is based upon many observations of numerous areas, the preservation of the fibrils in large pyramidal cells should be accepted with reservations, as a diagnostic feature in dementia paralytica.

Marchand (48) reports the examination of the middle portion of the left ascending and 2d frontal gyri in two cases of dementia paralytica, 1, senile dementia, 1, hebephrenia, 1, microcephalic idiocy, 1, fever delirium, 1, primary mental confusion, and 1, *delire de persecution*—type of Falret-Pottier. As regards dementia paralytica Marchand confirms the findings of Marinesco and those of Ballet and Laignel-Lavastine.

Schaffer (25) from a study of three cases of dementia paralytica in which the method of Bielschowsky was employed, demonstrated more or less constant alterations in the neurofibrils. Many of the drawings which accompany Schaffer's paper are brought forward as evidence for an endocellular net arrangement of the neurofibrils, a contention which might be unreservedly objected to if it alone depended upon observations on pathological material. The alterations which Schaffer describes consist in a granular disintegration of the endocellular network at the nodal points which result in the formation of star-shaped granular masses, while the open spaces of the net, at the same time, take on rounded shapes. Later the granules of the star-shaped masses become more finely comminuted and are then scattered through the cell as dust-like particles. In Schaffer's cases eleven areas were studied and of these he states, that the opercular sec-

tions showed the most advanced lesions, the paracentral antr. and post. central convolutions the most incipient changes. Clinically the cases of Schaffer offered the "maximum dementia and speech disturbance, paralysis of the extremities, incontinence, etc."

Bielschowsky and Brodmann (33) particularly emphasize the diminution in neurofibrils of the intercellular substance, the almost universal tinging of the nucleus, diminution of cell processes and alterations in and disappearance of the endocellular fibrils. Localized œdema is also mentioned. All of these findings are confirmed in this study of ours. The wide spread character of the changes in the neurofibrils is certainly compatible with what we know of the diffuse character of the lesions in dementia paralytica.

The swellings on the dendrites in Figs. 2, 9 and 10, which have already been mentioned are interesting, for their possible relation to similar swellings described by Schaffer (23, 24) in the processes, Spielmeyer (54) in the body of the ganglion cells in amaurotic idiocy, and the description of Straussler (55) of the swellings in the processes and cell-body in a case of congenital cerebellar atrophy. The simple œdema in Fig. 2 is probably the initial stage and what is seen in the swellings in Fig. 9, a terminal one, which is suggested by the red staining with Herxheimer's fat stain. In no case, however, were the swellings anywhere as large as those described by the above named observers or as may be found in sections from the cerebral cortex in a case of amaurotic idiocy in the possession of the writer.

SENILE DEMENTIA GROUP.

The following are the clinical abstracts of the cases in this group:

CASE VIII.—Mr. S., 71 years of age, occupation farmer, was admitted to the Westborough Insane Hospital, June 6, 1905.

Family History.—A maternal uncle, a brother, and a nephew were insane. The father of the patient died at the age of 62, cause unknown, mother at the age of 52 from apoplexy.

The patient is said to have enjoyed good health all his life, save for an attack of typhoid at the age of 20 and a sunstroke in 1901. The patient's school training was through the usual New England district school, and it is reported that he did not show special aptitude for study in youth, but was an industrious worker on his farm. After the sunstroke in 1901

Mr. S. lost interest in his work, would become excited at times, when he was incoherent in his speech, grew unusually garrulous, was violent, and had threatened his family on various occasions with an axe, a knife, a hoe, and a scythe. At times he had been depressed, would cry a great deal and had made an attempt to hang himself. His memory was much impaired and occasionally he could not recall his life-long friends and near relatives. He thought too that his friends were trying to injure him. Only rarely did he show any insight into his condition.

On admission, although physically well developed and fairly well nourished, his gait was weak and tottering. Both knee-jerks were exaggerated and the plantar reflexes quite lively. No Babinsky or clonus could be elicited. The superficial arteries could be felt as rather firm cords. The pupils were equal and responded with a fair degree of promptness to light and accommodation. The heart's action was regular but the second sound was accentuated.

Mentally the patient was apprehensive that some injury would be done him, and was also suspicious. Mr. S. was also depressed, stating that he wanted to die. He complained that his feet and legs felt weak and thought that he was in a foot and leg hospital to be treated for this condition. He could not give the name of the month, day, or week and similar data. His memory for the grossest events, remote and recent, was very poor. During the interview he was quite restless and his speech was at times incoherent.

The patient's condition did not improve materially, for soon thereafter he became very untidy and grew much weaker. December 12 of the same year the patient developed a lobar pneumonia from which he died the following day.

Autopsy 4¾ hours, post-mortem.

Anatomical Diagnosis.—Congestion and marked atheromatous condition of cerebral vessels, granulations of fourth ventricle, cyst of choroid plexus of left lateral ventricle, small hæmorrhages in left internal capsule and in dentate nucleus of right half of cerebellum, pial opacity of brain and cord; atheromatous changes and vegetations of cardiac valves, degen. of myocardium; emphysema, lobar pneumonia; congestion of liver and spleen; chronic interstitial nephritis; gastritis.

CASE IX.—Mr. L., age 70, jeweler, was admitted to the Westborough Insane Hospital, December 14, 1905.

Family History.—Father died of apoplexy, otherwise the family history is negative.

About two years prior to admission Mr. L. had an attack of influenza, after which the mental condition, for which he was committed, gradually developed. Prior to this time the patient had always enjoyed good health, had never used alcohol and was considered an industrious person. Since April, 1903, L. had steadily grown weaker, and slept poorly. Memory defect had been noticed by friends and was very poor except for

very gross events of the remote past. L. would often wander away from home and could not find his way back. There had been periods when he was more restless than usual, during which he had jumped from windows, assaulted his wife and daughter with a chair, torn up the bed clothing and was otherwise destructive. He also had ideas that he was being ill-treated at home. The speech had been somewhat thick and stumbling.

On admission the patient was poorly nourished, presented a marked systolic mitral murmur. The pupils reacted sluggishly to light and accommodation. Arcus senilis present. The knee-jerks were slightly increased. No Babinsky. Abdominal cremasteric reflexes elicited. There was general tremor of the body, but especially marked in the right upper extremity. All superficial arteries were firm and not compressible.

Mentally the patient did not have a good grasp on his surroundings, for he could not tell where he was nor could give the name of the month, day, or week correctly. He had an idea that he was a prisoner and had been brought to the hospital for incarceration.

On the following day L. could not recall that he had ever seen the physician, but thought it possible that he might have seen him in connection with the jewelry business. Although he would talk freely he was rather prolix. Two days later the patient showed considerable motor restlessness and at times was given to weeping.

January 6, 1906, with a temperature of 103 F., the patient was very restless and gave evidence of hallucinations of hearing and sight. During the day clouding of consciousness made its appearance and continued for the remaining five days of his life.

Autopsy 5½ hours, post-mortem.

Anatomical Diagnosis.—Markedly adherent dura, œdema of pia, congestion of cerebrum and atrophy of cerebral convolutions, arterio-sclerotic changes of the blood vessels of the brain; congestion of cord; atheromatous changes of mitral and tricuspid valves, coronaries and ascending aorta, degeneration of myocardium interstitial hepatitis and congestion; interstitial splenitis and congestion; cystic kidneys, chronic interstitial changes, renal calculi; enteritis.

CASE X.—Mr. D. age 74, occupation painter, was admitted to the Westborough Insane Hospital September 24, 1902.

Mr. D. immediately before his admission to this hospital had been a patient at the Massachusetts General Hospital, Boston, where he had been taken in a "dazed" condition. At the hospital in Boston, the patient was confused, could give no account of himself, save that he was a painter by occupation, was untidy, and showed marked disturbance of memory. On this account the patient was adjudged insane and thereupon committed to this hospital.

On admission the patient was in fair physical condition, the peripheral arteries, however, were firm and there was a peculiar muffling of the first sound of the heart. The pupils, which were equal reacted promptly to light

but were sluggish to accommodation. Hearing was defective. Knee-jerks were normal; no Babinsky; no ankle clonus. The superficial reflexes were normal. Gait and station were somewhat unsteady, but did not seem anything more than the infirmity incident to old age.

Mentally the patient appeared confused and the speech content was generally incoherent. The attention of the patient could, however, be occasionally attracted for short periods, as was evident at these times, in his replies to questions. The patient did not know where he was, for he thought that he was in the "old prison," neither could he tell where he was born, at one time giving Prince Edward Island as his birth-place, at another Portland, Maine. For the most of the time the patient remained quietly in bed but when he would get up to go to the toilet room he could not find his way back.

Four days after admission he was permitted to be up and dressed during most of the day. The apparent confused or dazed state passed off within three days but the memory defect showed no improvement during his entire hospital residence of a little more than three years. The clinical history offers little more than that of a quiet, demented old man, up to December 13, 1905. At this time D. began to be quite filthy, and thereafter constantly so, querulous and resistive.

January 11, 1906, a lobar pneumonia developed from which the patient died on the following day.

Autopsy 2½ hours, post-mortem.

Anatomical Diagnosis.—Pia-arachnoid opacity of parietal regions, atrophy of convolutions, atheroma of basilar vessels, degeneration of myocardium; lobar pneumonia; hepatic congestion; supernumerary spleens; gastritis.

The microscopical findings in this series of cases show that the distribution of the alterations in the neurofibrils of the cerebral cortex is likewise diffuse in character. One sees that the cell processes are fairly well preserved in contradistinction to what is the case in dementia paralytica. The neurofibrils, however, may present alterations almost as severe as those seen in the preceding group of cases. The cells present a somewhat shrunken appearance and fragmentation, granulation and disappearance of the fibrils are common. Figs. 16 and 20 are drawings of cells from the prefrontal and intermediate precentral areas and should be compared with Figs. 7 and 8, which are from identical areas in dementia paralytica drawn under the same conditions.

The more or less general fading out of intercellular fibrils which Bielschowsky and Brodmann have pointed out in contradistinction to the involvement of the finest fibrils as in dementia paralytica, was also noticeable in this series of cases.

According to Bianchi (63), "in a case of advanced senile dementia the destruction of the neurofibrillæ appears, as shown in Figs. 100 to 104 (Bianchi's figures), to be much more extensive than in the brain of a paralytic subject." The study of the seven cases of dementia paralytica here reported and four others partially studied lead us to the view that, as a rule, the alterations of the fibrils are more severe in the preceding group of cases than is the case in dementia senilis.

In Marchand's (48) case the lesions of the neurofibrils were uniformly pronounced in the perinuclear zone. The protoplasmic processes of the basilar portion of the cells were found to be atrophied and contained no fibrils. The apical dendrites contained a number of distinctly stained fibrils.

It will be evident from Figs. 16 and 20 that, not only is there involvement of the perinuclear zone, but the fibrils of the processes are equally involved. Indeed, distinct fibrils are wanting, in Fig. 20 especially, which is typical of the general cell-picture in the cerebral cortex of senile dementia.

CHRONIC ALCOHOLISM.

CASE XI.—Mrs. B., 38 years old, occupation saleswoman, was admitted to the Westborough Insane Hospital November 1, 1905.

Family History.—Father died of apoplexy at the age of 80. There was no history of mental or nervous diseases, intemperance, or tuberculosis in the antecedents of the patient.

Mrs. B. had been addicted to alcohol for a number of years. She had been married, but 12 years ago was divorced. After this Mrs. B. worked for ten years, in one place, as a saleswoman, but finally lost her situation on account of intemperate habits. Besides, during eight years of this period she had led a somewhat immoral sexual life. After losing her situation, for about two years, she drank much, chiefly whiskey and absinthe and also was addicted to the use of cocaine. The day before admission the patient was found by the police wandering aimlessly about the streets of Chelsea in a very unkempt condition and acting in an insane manner. In the account which she gave of herself to the authorities, she stated that for a week she had been in a hospital, where she had paid for three weeks' treatment in advance, and was out to attend to some business. Inquiry revealed that she had never been a patient at the hospital which she had mentioned and that aside from being physically unwell and mentally aberrated she was entirely without funds, notwithstanding her claims for the latter.

On admission to the hospital the patient was emaciated, generally unkempt, wore a wig on account of baldness, and had vermin about her person. The gait was weak and tottering, and in walking there was a tendency to throw the legs across each other and to raise the feet unduly high. There was some horizontal nystagmus of the eye-balls, the pupils were of normal width, reacted with a fair degree of promptness to light but were sluggish in their movement to accommodation. There were occasional twitchings of the muscles of the face and chiefly those about the mouth. There were fine tremors of the tongue as well as of the hands when the fingers were spread apart. The knee-jerk was absent on the right side and markedly diminished on the left. Achilles reflex diminished on both sides, no clonus, no Babinsky. Pressure over the spinal nerve roots, in the popliteal space, and the median nerve of the arm elicited tenderness. The patient could not stand with the heels and toes together, or even with the feet wide apart and the eyes closed without considerable swaying.

Mentally the patient would have short periods of confusion, alternating with comparatively lucid intervals. The speech was hesitating and stumbling in character and in the confused periods incoherent. Often in the middle of a sentence the patient would begin to wander, and for a minute or more did not appear to understand anything that was said to her. In one of the clear periods she gave correctly the day of the week, month, etc., but when asked where she had been the day before replied that she had driven in a carriage to a hospital uptown to see a lady who was sick. She also spoke a great deal of the Pan-American Exposition and stated that she had exhibited the products of one of the Massachusetts firms at the fair. (This was not a fact, for during this period the patient was employed as a saleswoman in Massachusetts.) Memory defect with a tendency to romance was later accentuated in the course of the patient's illness. She could never tell how long she had been in the hospital, and to cover up the gaps in her memory for recent events she would give glowing accounts of carriage drives she had taken in the forenoon or emphatically state that she had just returned from Cuba. Mrs. B. could not remember the physician's name from one visit to another and would often mistake the nurses for former acquaintances. She spoke occasionally of some woman on the floor below who was "very tantalizing," but never with any great feeling in the matter. She never claimed for herself any great wealth during her stay in the hospital, but stated in reply to a direct question, that she had a husband who took care of her handsomely and that he was a part owner in two vessels.

The patient grew progressively weaker, the speech defect increased, confusion and delirium became more pronounced and trophic sores of the dorsum of the right foot and hand developed.

An exhausting diarrhoea, accompanied with temperature, supervened 15 days after admission and continued until the patient's death, nine days later.

Autopsy 12 hours, post-mortem.

Anatomical Diagnosis.—Cerebral congestion, opacity and œdema of pia, atrophy of convolutions, cysts of choroid of right lateral ventricle; congestion of cord; degeneration of myocardium, early atheroma of ascending aorta; anthracosis, congestion, and œdema of lungs; hepatic congestion; chronic perisplenitis; acute hæmorrhagic nephritis; gastritis; enteritis; cystitis; uterine fibroma.

The question of cocaine intoxication or even of a condition produced by absinthe might arise in the consideration of the mental state in this case. However, the polyneuritis, memory defect, disorientation, etc., rather strongly suggest a psychosis of alcoholic origin which might possibly come within the limits of Korsakow's syndrome.

Intense pigmentation of ganglion and glia cells, marked œdema and chromatolysis of ganglion cells, increase of so-called satellite cells and numerous giant glia cells in cortex and white substance, progressive and regressive changes in the walls of blood vessels, with apparent moderate vascular proliferation were the most prominent features of the Nissl specimens in this case. It may be added that, the œdema and rarefaction of ganglion cells, described by Hoch (64) and which was so prominent, was almost as marked in the deeper layers of the cortex as in the more superficial layers. While the process which has been described was general in its distribution the Nissl sections from the post. gyri of the insula were the most pronounced.

From this case, two drawings of cells treated after Bielschowsky are offered, Figs. 3 and 6. These two drawings do not present any special neurofibril alteration but offer a rather striking parallel between the collective cell changes presented by a Nissl preparation on the one hand, and of possible consecutive alterations of the neurofibrils on the other hand. Fig. 6 is a drawing of a medium size pyramidal cell of the intermediate precentral cortex of this case. Œdema it will be seen is marked. (There were many other cells in which the process was even more marked.) Save for a fragment of a fibril in the apical dendrite and one in the axis cylinder all other residua of fibrils are represented by fine granules. The nucleus has also reacted to the impregnation. If the coloring of this figure were done in blue it would vary but little from a similar cell stained by the method of Nissl. Fig. 3 is a drawing of a pyramidal-shaped Betz cell of

the precentral cortex. These large cells showed, as a rule, less œdema than the majority of all other cells from the different areas studied. The drawing in the opinion of the writer represents an early stage in the œdematous process. The separation of individual fibrils and bundles of fibrils gives the impression that this condition has been brought about by mechanical means. The entire cell appears slightly swollen (2 mm. obj. and 8 comp. oc.) and in the basal portion of the cell alterations in the fibrils are beginning.

CEREBRAL LUES.

Of the two cases reported in this group, one presented a basal gummatous meningo-encephalitis with an area of softening in the right corpus striatum, and the other, two foci of softening, one in the white substance of the frontal lobe and another involving the greater part of the left caudate nucleus, putamen and globus pallidus. In this last case there was a moderate infiltration of the pia over the basal portion of the frontal lobes and over the anterior perforated space. While both cases showed, during the course of the disease, memory defect, as will be seen from the subjoined abstracts of the clinical records, Case XII offered an amnesic condition similar to that observed in Korsakow's psychosis, and in this respect is comparable to a case of cerebral lues recently reported by Roemheld (65), in which an amnesic symptom complex was a feature of the clinical history and also like another case earlier described by Emma W. Mooers (67). Microscopically, the sections from this case presented a massive infiltration of the pia and also of the vessels of the cortex where the pial infiltration was most marked, together with a somewhat general and lively glial reaction. In Case XIII, the most characteristic histological feature was an endarteritis of the Huebner type. Pial infiltration while present was comparatively insignificant and gave the impression of chronicity, whereas in Case XII the leptomeningitis was of an explosive character. The infiltration wherever found consisted almost entirely of lymphocytes.

CASE XII.—Mr. A., 38 years of age, occupation mill worker, was admitted to the Westborough Insane Hospital June 2, 1906.

Nothing is known of the patient's family history.

Acquaintances of the patient report that six months before admission

to hospital, impairment of memory and speech defect were noticeable, and that he had also entertained ideas of grandeur. Soon thereafter A. began to grow dull and listless and was inclined to sleep a great deal. For about three weeks before admission he had fancied that he saw people in his room and was often observed talking to imaginary persons. Although it was summer time he would claim it was snowing and would leave his bed, stating that he had to shovel the sidewalks. As a rule, however, he kept to his bed, but would get up for his meals.

On admission A. was in a fairly well nourished condition, but he was dull and listless and presented a somewhat unkempt appearance. The pupils were unequally dilated the right larger than the left and both reacted sluggishly to light and accommodation. There was some facial tremor particularly about the mouth which was accentuated in speaking. The patient could not walk without support, but this inability appeared to be due to weakness rather than to paralysis. The knee-jerks were increased, no clonus, no Babinsky, cremasteric and abdominal reflex normal. There was a gonorrhœal discharge from the urethra and three ulcers of a chancroid character on the glans penis. A history of having had gonorrhœa several times was obtained, and that two years before admission syphilis had been acquired.

There was a marked impairment of memory for recent as well as for remote events. On the whole the patient was dull, but there were short periods of perhaps a minute or more when a livelier interest was taken in the questions which were asked him. At other times A. did not seem to comprehend what was said to him. He did not know where he was, neither was he able to give the name of the month or its date. The patient's statements concerning his past were often contradictory, and when his attention was called to the conflicting statements which he had made there was a feeble attempt at jesting to cover up the evident gaps in his memory. A. complained that his head felt light and ached most of the time. The speech was thick, of a low monotone, and as the patient became fatigued, it was mumbling in character and almost unintelligible.

Two days later the patient was still disoriented, fatigued easily, and was inclined to romance. He would tell of having received visits and of trips which he had made during the day or the preceding evening, all of which were pure fabrications. In reply to a question if he saw double he answered, "I often see two people where there is only one, especially when I am overheated."

On the twelfth day after admission the patient brightened a little,—comprehension was better and the attention more sustained. This condition did not last long, however, and he soon became somnolent again, untidy and apparently more prostrated.

On June 20 it was observed that the patient's pillow was stained with a green-colored vomitus. At this time the breathing was heavy, and except for slight movement of the head in response to painful stimuli, the patient appeared completely unconscious. The pupils were unequally dilated,—

right, twice the size of the left, the limbs flaccid, and the pulse weak and compressible. For about three days before death a progressive ptosis of the right eyelid had been noticed.

The patient died June 20, 1906, 18 days after admission.

Autopsy, 1¼ hours, post-mortem.

Anatomical Diagnosis.—Basal gummatous meningo-encephalitis involving the basal portion of the frontal lobe, the anterior half of the mesial surfaces of the frontal lobe, the anterior perforated space, the insulae, optic commissure, the internal and external geniculate bodies and the cerebral peduncles, extending posteriorly as far as the pons, and in which the first, second, and third pairs of cranial nerves and the vessels of the Sylvian fissure are imbedded; granulations of the fourth ventricle softened area of the right corpus striatum, congestion of the cerebrum; congestion of cord, moderate opacity of its pia; degeneration of myocardium, atheromatus patches in ascending aorta; congestion of liver; small gummata of spleen; congestion of kidneys.

CASE XIII.—Mrs. L., 46 years of age, housewife, was admitted to the Westborough Insane Hospital December 4, 1905.

Family History.—Mother died of t. b. at the age of 48, father, of old age at 78. No other history of relatives obtainable.

Mrs. L. was the mother of one child, age 25, had been for years an excessive user of beer and whisky and, on her own statement, a courtesan before her marriage, during which period she had contracted syphilis. For about ten years the patient had been hard of hearing and during the past few months prior to admission her sight had been failing and she had complained of seeing two or even three objects where there was but one. The onset of her insanity was gradual. A year previous to admission there had been a fire in a store beneath her dwelling and although not reaching her apartments had frightened her considerably. This proved quite a nervous shock to the patient and from this time on she began to go down hill. For about five months patient's appetite had been poor and she had been sleeping most of the time. Meanwhile there was apprehension that she was going to be burned, poisoned, or electrocuted. During this period her memory is reported as good and that there was some insight into her condition.

On admission the patient was poorly nourished, weight 100 pounds, anemic and paralyzed on the right side of her body. There was a pustular eruption with rather dark red and firm borders, which was present over the scalp and upper half of the thorax, anteriorly and posteriorly, with numerous old depressed scars over the anterior and lateral surfaces of the right leg. There was a large tumor in the region of the right ovary and a rectocele presented. The pupils were slightly dilated, reacted to accommodation but were stiff to light. Both knee-jerks were exaggerated as well as the Achilles reflex on both sides. No ankle clonus, Babinsky. The entire body was tremulous.

The patient was very noisy and incoherent. She paid no attention to questions asked so that it was impossible to determine orientation, memory defect, or if hallucinations or delusions were present. This condition continued for about six days, when fears of burning, etc., were elicited. At this time patient said she felt better, but so soon as efforts were made to obtain any information concerning the remote or even recent past she immediately became depressed, would begin to cry and the speech content would be incoherent.

January 5, one month after admission the patient was quiet, had a fair grasp on her surroundings and realized that for some time prior to her admission and up to within a few days she had been unduly frightened over unreal things. Memory for remote events was, however, somewhat defective, for she made rather conflicting statements concerning her marriage and was not sure whether she was married or not. The paralyzed side of the body was beginning to show some improvement, for she could move her right arm a little but the grasp was still almost nil.

Two months later the patient complained of considerable nocturnal pains in the limbs, which, however, became less excruciating. Incontinence of urine developed April 5 of the same year. The patient was inclined to sleep a great deal and from this time on the condition became more marked. In the early part of June she began to fail more rapidly and there were periods of stupor and delirium, the patient lost what weight she had regained, the abdomen became boat-shaped and she died January 22, 1906.

Autopsy 2 hours, post-mortem.

Anatomical Diagnosis.—Moderate infiltration of the pia over the basal portion of the frontal lobes, in which the first pair of nerves are imbedded, congestion of cerebrum, small but symmetrical gyri, granulations of the fourth ventricle, a softened area in the corona radiata of the right side approximately 4 by 1.5 cm. and another softened area involving almost the entire caudate nucleus portions of the internal capsule, the putamen globus palidus and the most internal of the fibers of the external capsule; congestion of cord and moderate infiltration of its pia; degeneration of myocardium and old vegetations of the mitral cusps; congestion of remaining internal organs.

While the neurofibril alterations in both of these cases presented many features in common, in Case XIII cells poor in processes were more frequent, still extreme poverty of dendrites was not a feature of either of the cases. Rarefaction of the fibrils of the processes, fragmentation, adhesions, swellings and an extremely wavy appearance of the fibrils together with diffuse staining of the nuclei of ganglion cells were common in both cases, but more marked in Case XII. In Case XIII granular disintegration of the neurofibrils, a granular appearance of the nuclei and rather

short dendrites characterized the ganglion cells, particularly the large ones, of the left central gyri and the area from the left paracentral lobule. Fig. 24 is a drawing of a large pyramidal of the post. central gyrus left (upper block) and represents the alterations in the ganglion cells which were of equal intensity on both sides of the Rolandic fissure. While similar alterations could be found in the other areas which were studied, such cells were far less numerous.

The intercellular fibrils often presented conditions similar to those which have been described for the endocellular fibrils. The number of these fibrils appeared on the whole slightly diminished, and in areas such as the cortex of the insula which was the seat of a gummatous meningitis (Case XII), there was marked diminution and even complete disappearance of every type, intra as well as intercellular fibrils.

MICROCEPHALIC IDIOCY.

In our case of microcephalic idiocy there was not, as in the case reported by Bielschowsky and Brodmann (33), markedly pronounced microgyri of definite areas, but there was a general flattening of the convolutions with extremely shallow sulci and a relatively short corpus callosum. The frontal and occipital lobes were noticeably shorter than normal, the last mentioned failing for a distance of 2 cm. to cover the cerebellum in the usual manner. The entire brain, including pia, weighed 1134 grams.

CASE XIV.—Mr. P., age 42, no occupation, was admitted to the Westborough Insane Hospital, August 29, 1904.

The family history is negative for nervous and mental disease.

P. had been considered weak-minded all his life; he never learned to talk, except to articulate yes and no, which he employed but rarely, and had never been able to support himself.

On admission the patient was poorly nourished. The bony skeleton of the trunk, upper and lower extremities was normally developed, but there was considerable asymmetry in the contour of the skull. On the left side the parietal region of the skull slanted sharply from the vertex downward and forward and while the right side was somewhat more rounded it was by no means of a normal contour. The frontal region receded and the superior maxillary protruded markedly. The inferior maxillary was short and the chin flat and characterless. The upper incisors were wanting, the canines rather long and protruded beyond the upper lip, the re-

maining teeth presented varying degrees of decay. The ears were large, measuring, respectively, 8.75 and 8 cm. and stood out, approximately, at right angles from the head. When viewed from in front the whole head suggested that of a calf, but in profile the bird-like contour described by Ireland (68) was very much in evidence. There were small irregularly shaped patches of leucoderma over the left cheek and forehead and larger patches but equally irregular in outline over the anterior upper third of the thorax. The penis was small and the testicles rudimentary.

Mentally the patient seemed afraid and appeared suspicious. An attempt to take P.'s temperature (per rectum) was attended with great excitement and strenuous resistance. He appeared to understand certain simple language addressed to him, for he would comply with some of the requests. Orientation, however, could not be definitely determined for the reason that yes or no were the extent of his vocabulary and these were often used without discrimination. Peculiar inarticulate sounds of a guttural tone were the only other responses to questions and these sounds were often uttered during the examination without relation to any questions asked the patient. P. would often thrust out his tongue, sweep it around the corners of his mouth or over the upper lip and grin in a silly manner, and would also, from time to time, go through senseless and purposeless waving movements with the hands and arms.

The patient's subsequent hospital residence offers little of interest; he was for the most part tidy in his habits, quiet and tractable, but was always suspicious of the bath-tub, however, he would submit to the spray.

In February, 1905, an eczematous eruption of the lower extremities developed, which gradually became universal and persisted until the patient's death.

December 28, 1905, a diarrhoea with slight rise of temperature (101 F. per rectum), made its appearance and five days later the patient died.

Autopsy 3½ hours, post-mortem.

Anatomical Diagnosis.—Microcephaly, arrested development of the frontal and occipital lobes, flattened gyri and shallow sulci; endocarditis, degeneration of myocardium; pulmonary congestion; spleomegally; fatty liver; gastritis; enterocolitis.

In the microscopical examination of sections treated for neurofibrils as well as in sections handled by other methods, the first things to attract attention were the apparent diminution in ganglion cells and the ill-defined cell lamination of the ganglion cells of the cortex. This condition was also noted in the case reported by Bielschowsky and Brodmann in which there were localized areas of microgyri. In our case the condition was generally distributed. Paucity of cells was, perhaps, more general than ill-defined lamination. While the central convolutions showed less disturbance in cell arrangement than the other areas

studied, there was, nevertheless, sufficient disarrangement to be noticeable. The ganglion cells were small and often it was difficult to determine where the cell-body ended and the apical dendrite began. See Figs. 25 and 26. Some idea may be gained of relative sizes by comparing Fig. 25, a large pyramidal cell of the prefrontal cortex with Fig. 7, a cell from the corresponding area and lamina in a case of dementia paralytica and Fig. 16 the same type of cell from a case of senile dementia, all of which were drawn under exactly the same conditions. Further comparison may be made between Fig. 27 and Fig. 8, both of which are large pyramidal cells of the intermediate precentral cortex of Campbell.

The number of cell processes was generally fewer than normal and in some instances the poverty was as marked as in dementia paralytica. See Fig. 27. In the apical dendrite and also in the radiations of Meynert, there were often encountered large areas of oedema where fibril tracts were widely separated thereby, Fig. 26, or areas of rarefaction as seen in Fig. 27. It is doubtful, however, if these conditions have anything to do with the previous mental state, while an agonal origin may be considered, post-mortem changes may be reasonably excluded, since in this case, the autopsy was made $3\frac{1}{2}$ hours after death.

The neurofibrils were generally altered, localized swellings, fragmentation, and rosary appearances were common while distinct, sharply defined fibrils or nets of fibrils were rare. The number of intercellular fibrils did not appear out of proportion to the number of cells, still when sections were compared with normal preparations of similar areas the intercellular mesh of fibrils appeared much lighter in this case.

In Marchand's (48) case the cells were small, possessed fewer processes than normal, but there was a normal neurofibril content. This led Marchand to the conclusion that, "Il existe ici par rapport a l'etat normal une difference de quantite plutot de qualite."

The three figures which we offer are fairly representative of the ganglion cells of the 15 different areas of the cortex studied in our case of microcephalic idiocy. When compared with so-called normal neurofibril pictures it will be seen that the differ-

ences offered by these figures are not differences of degree, as in the case of Marchand, but of kind.

The case of Marchand differs then from the case of Bielschowsky and Brodmann and these last writers mention a case which differed from the one they reported. The three cases which have been cited together with our case make it quite clear that great caution must be exercised in the interpretation of the changes which the neurofibrils offer in microcephalic idiocy, and for that matter in the different psychoses as well and, perhaps, also in the experimentally induced lesions.

We have called attention to the scepticism entertained by Cerletti and Sambulini (42) (*vide supra*) as regards the so-called pathological alterations in the neurofibrils described by various writers. This scepticism it appears was the result of their study of the neurofibrils in experimentally induced lesions where the methods of Cajal and that of Donnaggio were employed to demonstrate the fibrils. These observers first studied the spinal cords in rabbit "after resection of some of the spinal roots on one side." Eight to 15 days later the animals were killed. In another series of animals they produced an axonal degeneration in one of the external geniculate bodies by excising a piece of tissue 1.5 cm. square from the surface of the parieto-occipital cortex, using the healthy cells of the internal geniculate body of the same side for comparison. Three to 8 days following the operation they did not find any lesions of the neurofibrils on the side corresponding to the operation nor on the other side, but there were cells with unstained neurofibrils in the external and internal geniculate bodies on both sides. Ten to 15 days after the operation the cells of the external geniculate body on the side of the lesion did not present any neurofibril nets, there were, however, cells in which coarse and rarefied fibrils persisted while on the other side the number of cells in which "neurofibrillary elements were not visible was quite smaller." Cerletti and Sambulini next essayed ligation of the abdominal aorta immediately above the renal arteries with somewhat more uniform results in the lumbar enlargement of the cord, but state, however that, they "could frequently find the neurofibrillary elements in the cervical enlargement of operated animals as well as in that of normal animals."

Marinesco (46, 47) from his studies on animals suffering from rabies, resection and tearing out of nerves, and ligation of the abdominal aorta, was able to demonstrate more or less constant lesions and is of the opinion that the neurofibrils are more sensitive to pathological lesions than the chromatophilic substance. Bearing on this last, Marinesco states in an account of the consecutive lesions produced after the ligation of the neurofibrils that, "quarante heures apres la ligation de l'aorte abdominale j'ai trouve un bon nombre de cellules completement deprouves de neurofibrilles qui possedaient encore des elements chromatophiles."

Cajal (44, 45) describes changes in the neurofibrils produced by rabies in which the primary fibrils were reduced in number and at certain points presenting enormous fusiform swellings. Fusiform enlargement and granular degeneration of the fibrils were observed in the beginning of the paralysis.

Gentes and Bellot (51) after ligating the carotids in dogs found lesions which were in some respects comparable to those described by Cajal in rabies.

Riva (53) employing the method of Donnaggio reports distortions of the endocellular nets and the presence of vacuoles in the ganglion cells of animals which had been starved, a condition which was not observed in other toxic processes.

Lache (43) has recently reported a study of the cadaveric changes which the neurofibrils undergo. From this study of Lache's the inference might be readily drawn that many of the alterations which have been described are none other than post-mortem alterations. According to this observer the cadaveric alterations of the neurofibrils are of two kinds, (a) where the fibrils of the perinuclear area and those of the dendrites are the first to become effected, (b) where all of the neurofibrils simultaneously undergo alterations. The former type is more frequent in the large ganglion cells with thick darkly staining fibrils. The changes begin with a fine granular disintegration of the perinuclear fibrils which finally completely disappear. When the process is more severe, granular disintegration and, although of a less intensive grade, fragmentation also of the fibrils of the dendrites may occur. Those cells with very fine fibrils which usually stain

palely, such as the Purkinje cells of the cerebellum, present alterations of the fibrils simultaneously in dendrites and cell-body. Lache states, that while these cadaveric changes may vary as to the time of onset, they are dependent upon locality, temperature, light and moisture. The more superficial cells of the cortex disintegrate earlier than those of the deeper layers, and where the brain has been allowed to remain *in situ* the process is less rapid than is the case after removal of the organ. In warm weather the changes make their appearance earlier than in the cold season, and the last traces of the cadaveric changes are to be seen in the nucleus. The cadaveric alterations begin usually from 14 to 16 hours after death. Lache sees a very close relation, in these post-mortem changes, to the so-called pathological alterations in neurofibrils and looks upon them as nothing more than the natural death of the cell.

With the view of eliminating, as much as possible, post-mortem alteration as a factor, our cases have been selected largely from autopsies which were made early after death. Two cases, one 14 and the other 48 hours after death have been purposely added by way of comparison. From these two cases as well as one other 48 hours post-mortem, which is not reported, it would be difficult, in certain instances at least, to ascribe post-mortem alterations or any other kind of alteration to the condition which some cells offered. Nevertheless, the so-called granular disintegration, disappearance of fibrils and dust like particles in the protoplasm of the ganglion cells and intercellular fibrils were more common in our Case VII which was autopsied 48 hours after death than in the other cases of the dementia paralytica group. On the other hand, the general histological changes as revealed by Nissl preparations were by no means as severe in this case as in some others of this group.

Fig. 20 is a drawing of a medium size pyramidal cell from the intermediate precentral cortex of Case VII. The drawing is fairly representative of the type of granular disintegration met with in this case. The figure should be compared with Fig. 8, which was from a case autopsied $2\frac{1}{2}$ hours post-mortem. The two figures show slight differences, the nucleus in Fig. 20 being more darkly tinged, the forked process shows fibrils which have not yet entirely disintegrated and the granulations present less uniformity of size and staining reaction than is to be found in Fig. 8.

SUMMARY.

It has been indicated throughout this paper that great caution must be exercised in the interpretation of the alterations which the neurofibrils present in material from pathological sources, a caution which in the light of our present knowledge cannot be too strongly emphasized. The writer believes, nevertheless, from a study of these 14 cases and 40 others which have been examined in the laboratory of the Westborough Insane Hospital but not reported, and after due consideration of the objections which have been raised, that alterations in the neurofibrils which might well be considered pathological, may be demonstrated in the cerebral cortex of persons dying insane.

(a) The alterations in the neurofibrils when taken alone do not appear to have any greater value for diagnostic purposes than the mere disintegration of the tigroid masses in a Nissl preparation.

(b) The poverty in cell processes the more or less universal tinging of the nucleus and destruction of the finer intercellular fibrils characterize the silver impregnation of the dementia paralytica cortex, whereas fair preservation of the dendrites and an equally diffuse destruction of intercellular fibrils, but without special preference for the finest elements, is the rule in dementia senilis.

(c) The alterations in the remaining groups of cases reported suggest that these changes may be due to a variety of causes, such as œdema, faulty nutrition or development and the direct action of intoxications introduced from without.

(d) Alterations in the neurofibrils such as granular disintegration, fragmentation, localized swellings, rarefaction and complete destruction were to be found in varying stages of intensity in all of our cases.

(e) Just as the *ensemble* in a Nissl preparation is of value in determining a dementia paralytica or in differentiating a luetic meningeal or perivascular infiltration, in almost to the same degree may the sum of the findings in a silver impregnation for neurofibrils be employed in making an anatomical diagnosis of dementia paralytica, or in differentiating it from a disease with a dystrophic substratum such as dementia senilis.

REFERENCES.

- (1) Remak: Amtlicher Bericht der 29 Versammlung deutscher Aerzte u. Naturforsch. Cited by Frommann (5).
- (2) Lieberkühn: De Structura Gangliorum Penitiori. Berlin, 1849. Cited by Frommann (5).
- (3) Wagener: Ueber Zusammenhang des Kerns und Kernkörpers der Ganglienzellen mit dem Nervenfasern. Zeitschr. f. wiss. Zool., Bd. 8, pp. 455-457.
- (4) Axman: De Gangliorum Systematis Structura Penitiori. Inaug. Diss. Cited by Frommann (5).
- (5) Frommann: Ueber die Färbung der Binde- und Nervensubstanz des Rückenmarkes durch Argentum nitricum und ueber die Struktur der Nervenzellen. Virchow's Archiv, Bd. 31, pp. 129-151.
- (6) Beale: On the Distribution of Nerves to the Elementary Fibers of Striped Muscle. Phil. Trans., 1860, pp. 611-619.
- (7) Deiters: Untersuchungen ueber Gehirn u. Rückenmark des Menschen u. der Säugetiere. Braunschweig, 1865. Cited by Bethe.
- (8) Schultze: Ueber die Strukturelemente des Nervensystems. Stricker's Handbuch der Lehre von der Geweben, Leipzig, 1871, pp. 108-136.
- (9) Bethe: Allg. Anat. u. Physiol. des Nervensystems. Leipzig, 1903, p. 14.
- (10) Kupffer: Ueber den "Axencylinder" markhaltiger Nervenfasern. Sitzungsberichte d. math. phys. cl. d. kgl. bayer Akad. d. wiss., 1883, pp. 466-475.
- (11) Becker: Zur Physiologie der Ganglienzelle. XX Wandervers. d. südwestd. Neurologen u. Irrenärzte. Ref. in Archiv f. Psychiatrie, Bd. 27, Heft 3.
- (12) Apathy: Das leitende Element des Nervensystems und seine Topographischen Beziehungen zu den Zellen. Mitteil. a. d. zool. Station zu Neapel, Bd. 12, pp. 495-748.
- (13) Barker: The Neurones. Jour. Am. Med. Assoc., Vol. 46, pp. 929-935 and 1006-1011.
- (14) Barker: The Nervous System and its Constituent Neurones. New York, 1899, pp. 52-65.
- (15) Bethe: Ueber die Primärfibrillen in den Ganglienzellen vom Menschen und andern Wirbeltieren. Morpholog. Arb. von Schwalbe, Bd. 8, pp. 95-116.
- (16) Bielschowsky: Die Silberimprägnation der Neurofibrillen. Jour. für Psychol. u. Neurol., Bd. 3, pp. 169-189.
- (17) Economo: Beiträge zur normalen Anatomie der Ganglienzelle. Archiv für Psych., Bd. 41, pp. 158-201.
- (18) Paton: A Study of the Neurofibrils in the Ganglion Cells of the Cerebral Cortex. Jour. Exp. Med., Vol. 5, pp. 21-25.
- (19) Ramon y Cajal: Un Sencillo Metodo de Coloracion Selectiva del Reticulo Protoplasma y sus Efectos en los Diversos Organos Nerviosos. Trabajos del Lab. Investig. Biol., Madrid, Tomo 2, pp. 129-221.

- (20) Held: Zur weiteren Kenntnis der Nervenendfüsse und zur Struktur der Sehzellen. Abhandl. d. math.-phys. cl. d. kgl. sächs. Gesell. d. Wiss., Bd. 29, pp. 146-181.
- (21) Donnaggio: The Endocellular Fibrillary Reticulum and its Relation with the Fibrils of the Axis-Cylinder. Review Neurol. and Psychiatry, Vol. 3, pp. 81-100.
- (22) Schaffer: Recherches sur la structure dite fibrillaire de la cellule nerveuse. Revue Neurologique, 1905, Nr. 21.
- (23) Schaffer: Zur Pathogenese der Tay-Sachsens amaurot. Idiotie. Neurol. Centralbl., 1905, Nr. 9 u. 10.
- (24) Schaffer: Weitere Beiträge zur pathologischen Histologie der familiären amaurotischen Idiotie. Jour. f. Psychol. u. Neurol., Bd. 6, pp. 84-107.
- (25) Schaffer: Ueber Fibrillenbilder der progressiven Paralyse. Neurol. Centralbl., 1906, Nr. 1.
- (26) London: Zur Lehre von dem feineren Bau des Nervensystems. Archiv f. mikroskop. Anat., Bd. 66, pp. 111-115, 1905.
- (27) Jäderholm: Endozelluläre Netze oder durchlaufende Fibrillen in den Ganglienzellen? Archiv f. mikroskop. Anat., Bd. 67, 103-119, 1905.
- (28) Lugaro: Edinger's Report. Schmidt's Jahrbücher CCLXXXVII, p. 7. Cited by Schaffer (25).
- (29) Lugaro: Sulla struttura del cilindrasso. Riv. di Patol. nerv. e ment., 1905. Ref. in Zeitschr. f. wiss. Mikroskopie, Bd. 22, p. 100.
- (30) Joris: A propos d'une nouvelle méthode de coloration des neurofibrilles. Bulletin d. l'Acad. royale d. médec. d. Belgique, 1904.
- (31) Marinesco: Nouvelles recherches sur les neurofibrilles. Revue Neurologique, 1904, pp. 813-826.
- (32) v. Gehuchten: Considérations sur la structure interne des cellules nerveuses et sur les connexions anatomiques des neurones. Le Névrxax, Tome 6, pp. 83-116.
- (33) Bielschowsky and Brodmann: Zur feineren Histologie und Histopathologie der Grosshirnrinde. Jour. f. Psychol. u. Neurol., Bd. 5, pp. 173-197.
- (34) Soukhanoff: Contribution a l'étude de réseau endocellulaire dans les éléments nerveux des ganglions spinaux. Le Névrxax, Tome 6, pp. 75-80.
- (35) Wolff: Ueber die Kontinuität des perifibrillären Neuroplasms. Anatom. Anzeiger, 1903, Bd. 23, pp. 20-27.
- (36) Bielschowsky: Die histologische Seite der Neuronlehre. Jour. f. Psychol. u. Neurol., Bd. 5, pp. 128-150.
- (37) Held: Zur Kenntnis einer neurofibrillären Kontinuität im Centralnervensystem der Wirbelthiere. Archiv f. Anat. u. Physiol., 1905, Anat. Abth., pp. 55-76.
- (38) Wolff: Zur Kenntnis der Heldschen Nervenendfüsse Jour. f. Psychol. u. Neurol., Bd. 4, pp. 144-157.

- (39) Mahaim: Les terminaisons cylindraxiles pericellulaires de Held. Bulletin de l'Acad. royale de méd. de Belgique, 1905.
- (40) Prentiss: The Nervous Structures in the Palate of the Frog: The Peripheral Networks and the Nature of their Cells and Fibers. Jour. Comp. Neurol., Vol. 14, pp. 93-116.
- (41) Kronthal: Die Neutralzellen des centralen Nervensystems. Archiv f. Psychiatrie, Bd. 41, pp. 231-253.
- (42) Cerletti and Sambulini: On the Pathology of the Neurofibrils. Jour. Ment. Pathol., Vol. 7, pp. 114-119.
- (43) Lache: Altérations cadavériques des neurofibrilles. Revue Neurologique, 1906, pp. 209-216.
- (44) Cajal: Variations morphologiques du réticulum neurofibrillaire dans certains états normaux et pathologiques. Comp. rend. de la Soc. de biol. de Paris., Tome 1, 1904, p. 600.
- (45) Cajal: Las lesiones del reticulo de las células nerviosas en la rabia. Trabajos del Lab. Investig. Biol., Madrid, Tome 3, pp. 213-266.
- (46) Marinesco: Sur la réparation des neurofibrilles après les sections nerveuses. Comp. rend. de la Soc. de biol. de Paris, Tome 2, 1904, p. 407.
- (47) Marinesco: Lésions des neurofibrilles consécutives à la ligature de l'aorte abdominale. Comp. rend. de la Soc. de biol. de Paris, Tome 1, 1904, p. 407.
- (48) Marchand: Lésions des neurofibrilles des cellules pyramidales dans quelques maladies mentales. Comp. rend. de la Soc. de biol. de Paris, Tome 2, 1904.
- (49) Ballet and Laginel-Lavastine: Sur les lésions des neurofibrilles dans la paralysie générale. Revue Neurologique, 1904, pp. 762-763.
- (50) Parhon and Papinian: Note sur les altérations des neurofibrilles dans la pellagre. Comp. rend. de la Soc. de biol. Paris, Tome 1, 1905, pp. 360-361.
- (51) Gentes and Bellot: Altérations des neurofibrilles des cellules du chien, après ligature de la carotide primitive. Comp. rend. de la Soc. de biol. Paris, Tome 1, 1905, p. 153.
- (52) Ludlum: A Preliminary Report of the Possible Relationship of Neurofibrillary Changes to Insanity. Jour. Nerv. and Ment. Disease, Vol. 32, pp. 16-26.
- (53) Riva: Lesioni del reticolo neurofibrillare della cellula nervosa nell' inanizione sperimentale, etc. Riv. Sper. di Fren. XXXII. Ref. in Neurol. Centralbl., 1906, p. 175.
- (54) Spielmeyer: Ueber eine besondere Form von familiärer amaurotischer Idiotie. Neurol. Centralbl., 1906, pp. 51-55.
- (55) Sträussler: Ueber eigenartige Veränderungen der Ganglienzellen und ihrer Fortsätze im Centralnervensystem eines Falles von kongenitaler Kleinhirnatrophie. Neurol. Centralbl., 1906, pp. 194-207.

- (56) Marburg: Zur Pathologie des Achsencylenders in Tumorennarben des Gehirns. *Jahrb. f. Psychol. u. Neurol.*, XXVI, p. 270. Author's review in *Neurol. Centralbl.*, 1906, p. 194.
- (57) Vogt: Zur anatomischen Gliederung des Cortex cerebri. *Jour. f. Psychol. u. Neurol.*, Bd., 2, pp. 160-180.
- (58) Brodmann: Beiträge zur histologischen Lokalisation der Grosshirnrinde. *Jour. f. Psychol. u. Neurol.*, Bd. 2, pp. 70-107, 133-159.
- (59) Campbell: *Histological Studies on the Localization of Cerebral Function.* Cambridge University Press, London, 1905.
- (60) Alzheimer: Histologische Studien zur Differenzialdiagnose der progressiven Paralyse. *Nissl's Arbeiten* Bd. 1, p. 129.
- (61) Dagonet: Persistence des neurofibrilles dans la paralysie générale. *Annales Médico-psycholog.*, 1905, pp. 26-29.
- (62) Nissl: *Die Neuronenlehre und ihre Anhänger.* Jena, 1903, p. 115.
- (63) Bianchi: *Trattato di Psichiatria*,—English translation by J. H. Macdonald, New York, 1906, p. 846.
- (64) Hoch: Nerve-Cell Changes in Somatic Diseases. *Am. Jour. Insan.*, Vol. LV, pp. 231-240.
- (65) Roemheld: Ueber den Korsakow'schen Symptomencomplex bei Hirnlues. *Archiv f. Psych.*, Bd. 41, pp. 703-711.
- (66) Mooers: A Case of Syphilis of the Nervous System Presenting Clinically an Amnestic Symptom Complex, with Autopsy. *Am. Jour. Insanity*, Vol. 61, pp. 11-28.
- (67) Ireland: *Dictionary of Psychological Med.* Philadelphia, 1892, p. 805.

DISCUSSION.

DR. MILLER.—I think Dr. Fuller has given us an admirable presentation in an important field in the histopathology of the cortex. He has well said that there are many gaps in our knowledge which are as yet not filled in. I think we should be rather guarded in interpreting the changes which we find in the neurofibrils.

I did not hear the doctor make any mention of a recent paper by Lache in the *Revue Neurologique*, in which he described minutely the alterations which occurred in the neurofibrils as a result of post-mortem change. Lache described two types of change. The first type involved the cells of the type of the large pyramidal cells of the motor cortex and consisted of perinuclear destruction and later destruction of neurofibrils in the dendrites, and in extreme cases the whole structure of the cell was lost. His second type involved the cells of the Purkinje type, in which the neurofibrils are rather delicate and stained much less intensely than in the other type of cells. He says the cells of this type degenerate much more rapidly than the cells of the first type. The rapidity of these alterations depends upon the temperature, the exposure to light and the location. These changes usually begin from 12 to 16 hours post-mortem. Lache attempt to draw a parallel between the pathological changes and the

cadaveric changes, and he believes that the changes he found were nothing but the histopathological signs of the natural death of the cell. His paper is an exceedingly important one, taken in connection with the other papers on the neurofibrils, and I think ought to make us careful in interpreting the changes we find.

I would like to ask Dr. Fuller how early post-mortem his material was taken.

DR. FULLER.—In reply to the question of cadaveric changes raised by Dr. Miller, I would state that, in so far as it was possible an attempt has been made to eliminate post-mortem changes and to concentrate attention chiefly on those alterations which might be reasonably supposed to be due to disease, or which at least were ante-mortem in their origin. In the description of my personal observations I have sought to be conservative, giving preference to the word alteration over that of degeneration when speaking of changes in the neurofibrils. This study would have comprised a larger number of cases had I included all of the cases which came to autopsy in the different groups just reported. In the selection of cases only those which came to autopsy shortly after death were considered, 2, 3, 4,—8 hours after death was the time of the section. One case dying in summer where the autopsy was not made until 48 hours and another 13 hours post-mortem have been purposely added for their bearing upon the point raised by Dr. Miller.

Twenty minutes is rather a short period in which to say all one would desire upon the subject of neurofibrils. Thus, many features of my paper have only been lightly touched upon and others not mentioned at all, which will appear in the unabridged production. One of the things to which attention will be called is this: that the so-called granular disintegration (the tendency of late has been to consider this process as due largely to cadaveric changes) was, in instances, just as pronounced in a case where the autopsy was made in mid-winter, two hours after death, as in the case coming to section in the warmest summer month, August, 48 hours after death.

By the experimental work of Cerletti and Sambulini, as well as the studies of some others dealing with the post-mortem alteration in neurofibrils some scepticism has been aroused with regard to the published interpretations of findings in pathological material. Still, when one considers that Cerletti and Sambulini employed the method of Cajal in their studies, a method in which the impregnation is often very irregular, that fact might alone weaken the force of some of their contentions, not to mention the more or less opposite contentions of a trustworthy observer like Marinesco.

The Bielschowsky method, which was used in my study, seems to me better adapted to this sort of investigation; for with reasonable precautions one obtains almost invariably uniform results with equal impregnation over comparatively large areas.

The miniature balloon-shaped areas pictured in the dendrites of several of my figures, I look upon as localized œdematous areas. Still the swellings in Fig. 9 can not altogether be explained in this manner. That these swellings have any relation to those described by Schaffer in amaurotic idiocy and those of Straussler in a case of congenital cerebellar atrophy, it is, of course, difficult to say. The balloon-shaped swellings on the dendrites and cell-body in amaurotic idiocy may possibly have their origin in a localized œdema. As I have pointed out in my paper the condition in Fig. 9 may be but the terminal stage, the beginning of which, it is possible, is to be seen in the swelling in the apical dendrite of Fig. 2.

EXPLANATION OF PLATES.⁸

FIG. 1.—Pyramidal-shaped Betz cell of the anterior central gyrus, from a case dying in status epilepticus. The cell is normal. The fascicular arrangement of the fibrils in the apical dendrite is well shown and their reticular disposition at the base stand out with equal clearness. The nucleus is unstained. Drawn with the aid of an Abbe camera lucida. Zeiss 2 mm. apochromatic obj., No. 8 comp. oc.

FIG. 2.—Cell from the internal layer of large pyramidal cells (Brodmann's layer V) post. central gyrus, from a case of dementia paralytica with tabetic degenerations of the cord. Aside from a small balloon-shaped œdematous area at point marked *a* and an increased staining reaction of the interfibrillary substance at *b* the cell presents no abnormalities. Drawn under the same conditions as Fig. 1.

FIG. 3.—Pyramidal-shaped Betz cell from our case of chronic alcoholism (Case XI). The cell is poor in processes, swollen and the fibrils pressed apart in consequence of œdema. Here and there individual fibrils present a rosary appearance. Drawn under the same conditions as the preceding figure.

FIG. 4.—Large pyramidal cell of Heschl's anterior transverse temporal gyrus from Case III. Externally, portions of a disintegrating Golgi net is seen, beneath which there is a palely stained and irregularly shaped net-like structure of coagulative material. Zeiss 2 mm. apochromatic obj., comp. oc. No. 12.

FIG. 5.—Fusiform cell from the lamina multiformis of the foot of the first frontal gyrus. (Case III.) Two obliquely placed processes are seen, and in the center of each a rather thick and darkly stained fibril courses. In the upper process the fibril therein seems continuous with the endocellular net, a condition which is not apparent in the fibril of the lower dendrite. The nucleus and interfibrillary substance are diffusely stained. Drawn under the same conditions as Fig. 3.

FIG. 6.—Medium size pyramidal of intermediate precentral cortex of Case XI (chronic alcoholism). The cell is swollen, presents large clear

⁸ The drawings are by Mr. E. B. Smith, Miss M. E. Dickinson, and the author.

spaces and the protoplasm disseminated with fine dust-like particles or clumps of such particles. In the axis cylinder and apical dendrite fragments of neurofibrils are to be made out. Drawn under the same conditions as Fig. 5.

FIG. 7.—Large pyramidal cell of the pole of the frontal lobe from a case of dementia paralytica. (Case V). A more or less distinct net-like arrangement of the fibrils is seen not only in the cell body, but also in the dendrites. In the body of the cell the meshes of the net are round and the trabeculæ, in areas have been altered into star-shaped masses of granules. At the base of the cell where the staining is intense, a net structure can not be made out. In the fibrils which continue from the apical dendrite fork-like branchings are seen which appear to take part in the formation of the endocellular net. Drawn under the same conditions as Fig. 6.

FIG. 8.—Large pyramidal cell of precentral gyrus from the same case as the preceding figure. The fibrils everywhere present a rosary appearance. A true net can not be made out, at best, only a reticular arrangement of the fibrils at the base. Poverty of dendrites is a feature. Zeiss 2 mm. apochromatic obj., comp. oc. No. 12.

FIG. 9.—Large pyramidal of anterior transverse temporal gyrus (left) from Case I. A rather thick but palely stained bundle of fibrils courses in the center and along one periphery of the apical dendrite. The protoplasm of cell-body and processes is sprinkled with large and small, irregularly shaped darkly staining granules. At *a* may be noted swellings which do not seem referable to the origin of secondary dendrites. Drawn under the same conditions as Fig. 8.

FIG. 10.—Large pyramidal from the internal layer of large pyramidal of post. central cortex in Case II with tabetic degenerations in the cord. The cell is drawn from the upper block (left) of this gyrus. In the swollen apical dendrite a rather thick band of striæ is visible, otherwise cells and processes are darkly but irregularly stained. At *e* in the two small dendrites which remain small balloon-shaped areas of œdema are seen. Compare with Fig. 18, which is a Betz cell from the anterior central gyrus of the same side at the same level. Fig. 10 was drawn under the same conditions as Fig. 9.

FIG. 11.—Large pyramidal from the external layer of large pyramidal (Brodman's layer III^b) of Case III. The nucleus and cell protoplasm are diffusely stained, the nucleolus is to be made out as a very darkly stained ring and throughout the cell a net structure with more or less irregularity in staining reaction and of the size of the meshes and trabeculæ is seen. Poverty of cell processes. Zeiss 2 mm. apochromatic obj. comp. oc. No. 8.

FIG. 12.—Large pyramidal of the external layer of large pyramidal of the anterior portion of the first temporal gyrus (Campbell's audito-psychic type of cortex, an area not studied in every case of this series). The cell may be considered fairly normal and is in marked contrast to

analogous cells of the neighboring audito-sensory cortex which, generally, in our cases of dementia paralytica presented marked alterations in the fibrils. The type of fibril arrangement of these cells in both areas is very much alike,—reticulo-fascicular. Zeiss 2 mm. apochromatic obj. comp. oc. No. 12.

FIG. 13.—Cell from the fusiform layer of the first frontal gyrus (right) Case V. Adhesion and intense staining of the fibrils along the periphery of the cell and in the dendrites, diffuse staining of the cell protoplasm and a marked granular appearance of the nucleus are prominent in this drawing. Drawn under the same conditions as Fig. 12.

FIG. 14.—Small pyramidal of the third frontal gyrus (*pars triangularis*) from Case VI. The drawing shows a complete disappearance of fibrils and dendrites. There is an accumulation of pigment about the basal portion of the cell, the nucleus has reacted to the stain and the entire cell is sprinkled with granules of various sizes, which have reacted somewhat irregularly to the stain. Drawn under the same conditions as Fig. 13.

FIG. 15.—Large pyramidal of the first frontal gyrus (frontal type of cortex) Case V. The cell appears slightly swollen, the intercellular substance tinged, particularly about the base, and to the right of the drawing disintegration of the endocellular net at its nodal points is seen. The nucleus is unstained and the continuation of fibrils from the dendrites with the endocellular net structure is fairly prominent. Drawn under the same conditions as Fig. 14.

FIG. 16.—Large pyramidal of prefrontal region from Case IX. (Dementia senilis.) There is good preservation of processes as compared with Fig. 7, a cell from the same region in a case of dementia paralytica. The alterations in the fibrils are, however, of equal intensity, perhaps, greater. Zeiss 2 mm. apochromatic obj. comp. oc. No. 12.

FIG. 17.—Large pyramidal of third frontal gyrus, same slide as Fig. 14, and one of a few almost normal cells found in an area where the great majority of cells showed the most marked alterations in the neurofibrils and where poverty of processes was most pronounced. Zeiss 2 mm. apochromatic obj. comp. oc. No. 8.

FIG. 18.—Pyramidal-shaped Betz cell from upper precentral block of tissue (left) Case II. The fasciculo-reticular arrangement of the fibrils is well brought out. The nucleolus shows as a darkly stained ring and the fibrils at the base are seen in a state of granular disintegration. Compare with Fig. 10.

FIG. 19.—Multipolar Betz cell of upper block of tissue from left precentral cortex, Case VI. There is complete disappearance of dendrites and fragmentation and a pronounced disintegration of the neurofibrils. The nucleus is eccentric and has reacted to the stain, the nucleolus is outlined as a faintly stained ring. Compare sections from the cord of this case, Fig. 30 *a, b, c*. Zeiss 2 mm. apochromatic obj. comp. oc. No. 12.

FIG. 20.—Medium size pyramidal of intermediate precentral cortex from Case VII. The granular disintegration of the fibrils, the staining of the intercellular substance and the nucleus are probably of post-mortem origin. Compare similar changes in Fig. 8, which is a drawing from a case in which the tissue was fixed shortly after death. Drawn under the same conditions as Fig. 19.

FIG. 21.—Same type of cell as the preceding figure and drawn under the same conditions. This cell is from a case of dementia senilis (Case VIII). The general neurofibril alteration is the same as in Fig. 16, another case of dementia senilis and drawn under like conditions.

FIGS. 22 and 23.—Large pyramidal from the intermediate precentral cortex of Case XII (cerebral lues). Adhesions, tortuosities, rarefaction, diffuse staining of nucleus and interfibrillary substance characterize these figures. Zeiss 2 mm. apochromatic obj. comp. oc. No. 12.

FIG. 24.—Large pyramidal from internal layer of large pyramidal of the upper left block of tissue from the post. central gyrus. Case XIII. The cell is everywhere sprinkled with irregularly stained granules of nearly equal size. Drawn under the same conditions as Figs. 22 and 23.

FIG. 25.—Large pyramidal of prefrontal cortex. Case XIV. Granulations, fusiform swellings of the fibrils and a small swelling in the middle basal dendrite, tinging of the interfibrillary substance and nucleus are to be seen in this drawing. Drawn under the same conditions as Fig. 24.

FIG. 26.—Pyramidal-shaped Betz cell of precentral cortex (left) from Case XIV. The same general neurofibril alteration is present in this figure as in the figure which precedes. Drawn under the same conditions as Fig. 25.

FIG. 27.—Large pyramidal of the intermediate precentral cortex from Case XIV in which fusiform swellings, granular disintegration and a wavy appearance of the fibrils are seen. In addition rarefaction of the apical dendrite, which was also present in the preceding figure. Drawn under the same conditions as Fig. 26.

FIG. 28.—a, b, c, 6th cervical, 6th dorsal, and 5th lumbar segments, respectively, from our additional case with tabes where the cells of the antr. central convolution were well preserved, particularly Betz cells, and the ganglion cells of the post. central convolutions markedly altered.

FIG. 29.—a, b, 8th cervical and 1st lumbar, respectively, from Case II. The neurofibril alterations were, in general, the same as in the case from which the preceding photomicrographs were taken.

FIG. 30.—a, b, c, 6th cervical, 5th dorsal and 3d lumbar segments, respectively, from Case VI in the post. central cortex, of which the ganglion cells, especially the large pyramidal cells, were well preserved in spite of the degenerations in the post. columns.

SOLOMON C. FULLER, M. D.



FIG. I.

SOLOMON C. FULLER, M. D.

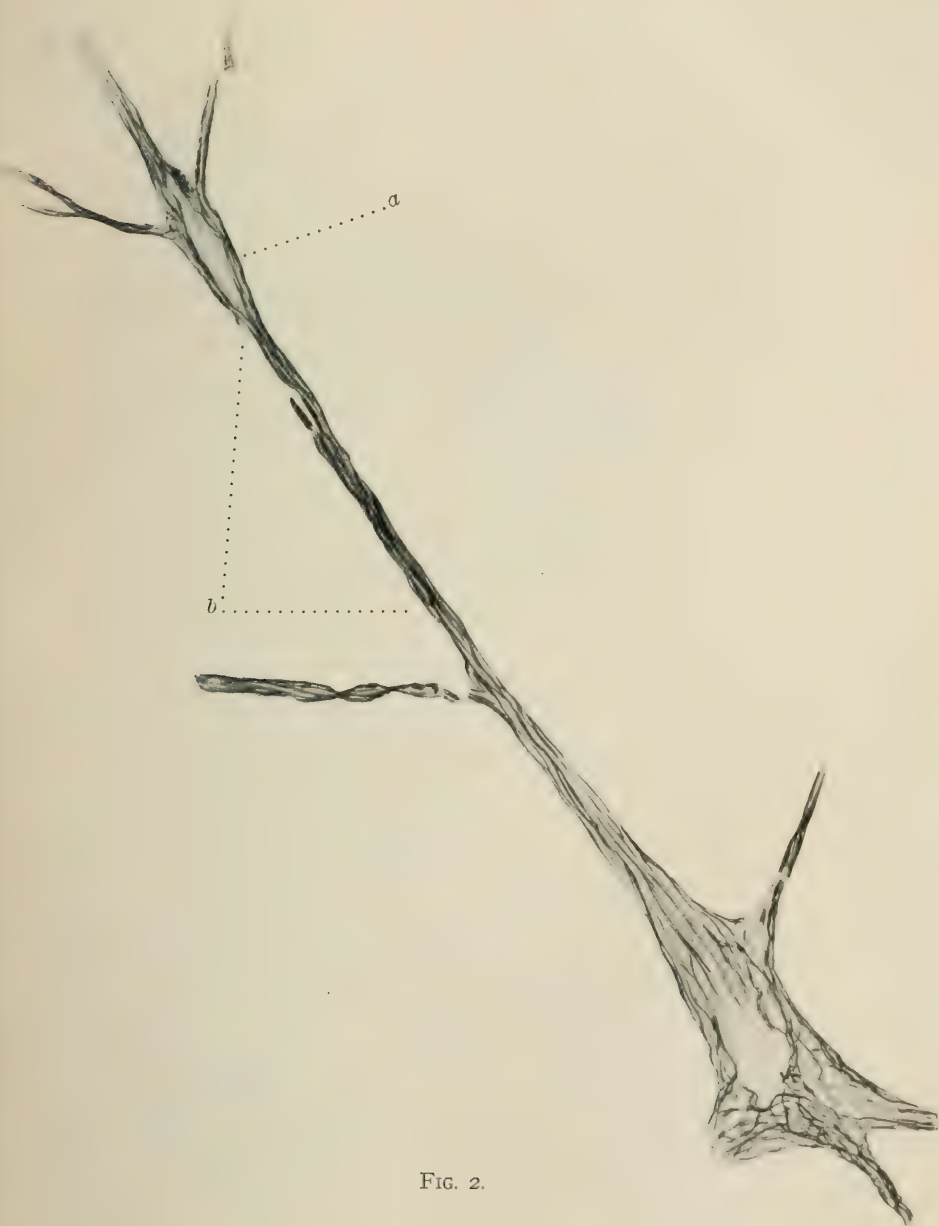


FIG. 2.

SOLOMON C. FULLER, M. D.

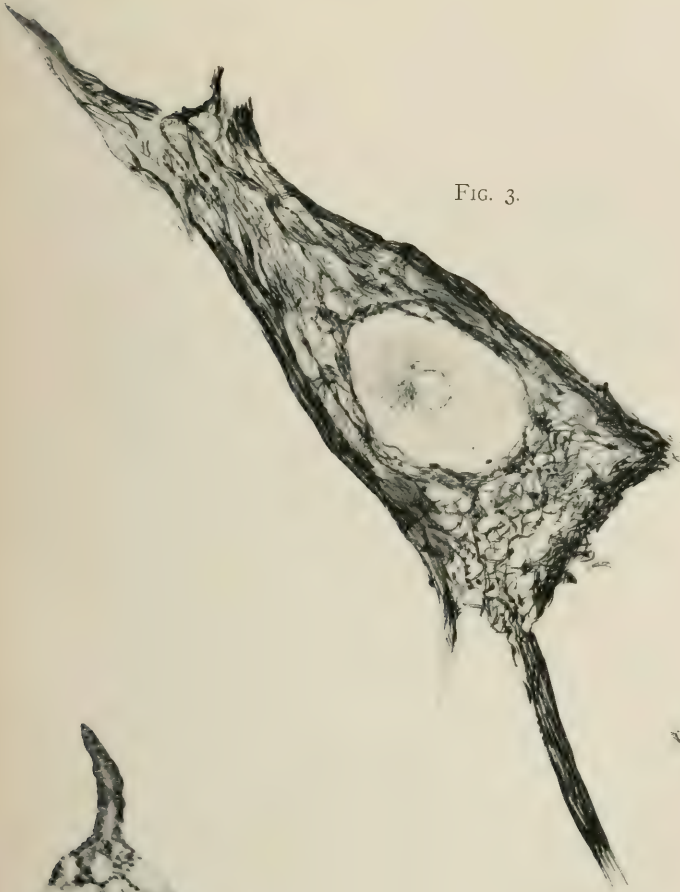


FIG. 3.

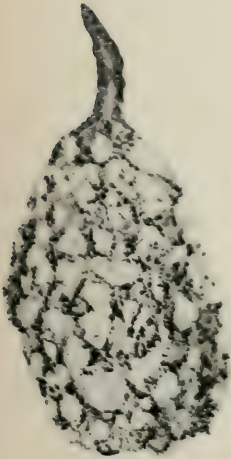


FIG. 4.

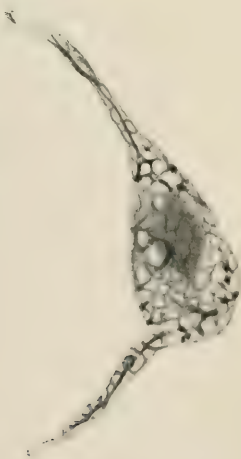


FIG. 5.

SOLOMON C. FULLER, M. D.

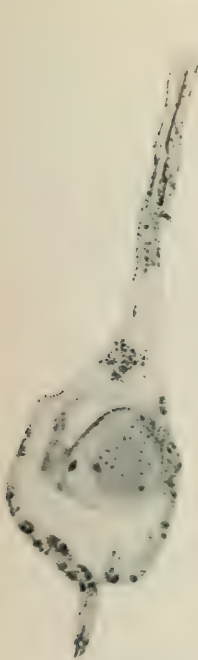


FIG. 6.

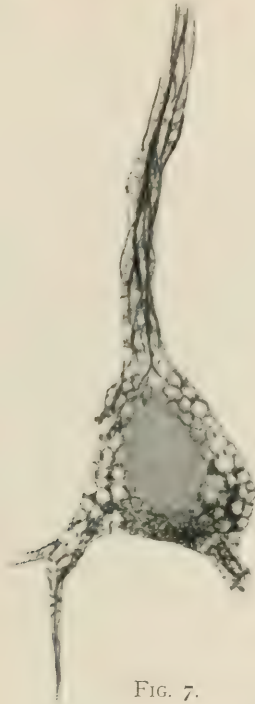


FIG. 7.

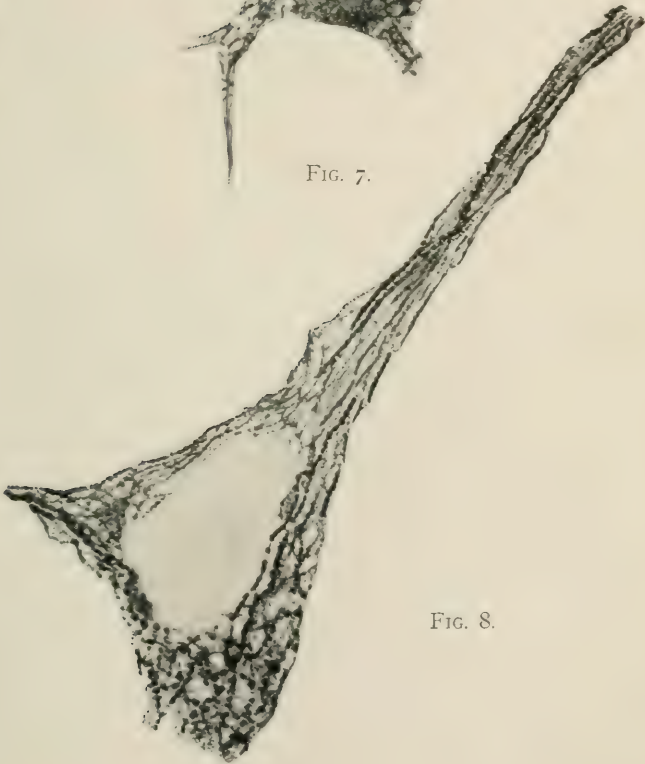


FIG. 8.

SOLOMON C. FULLER, M. D.

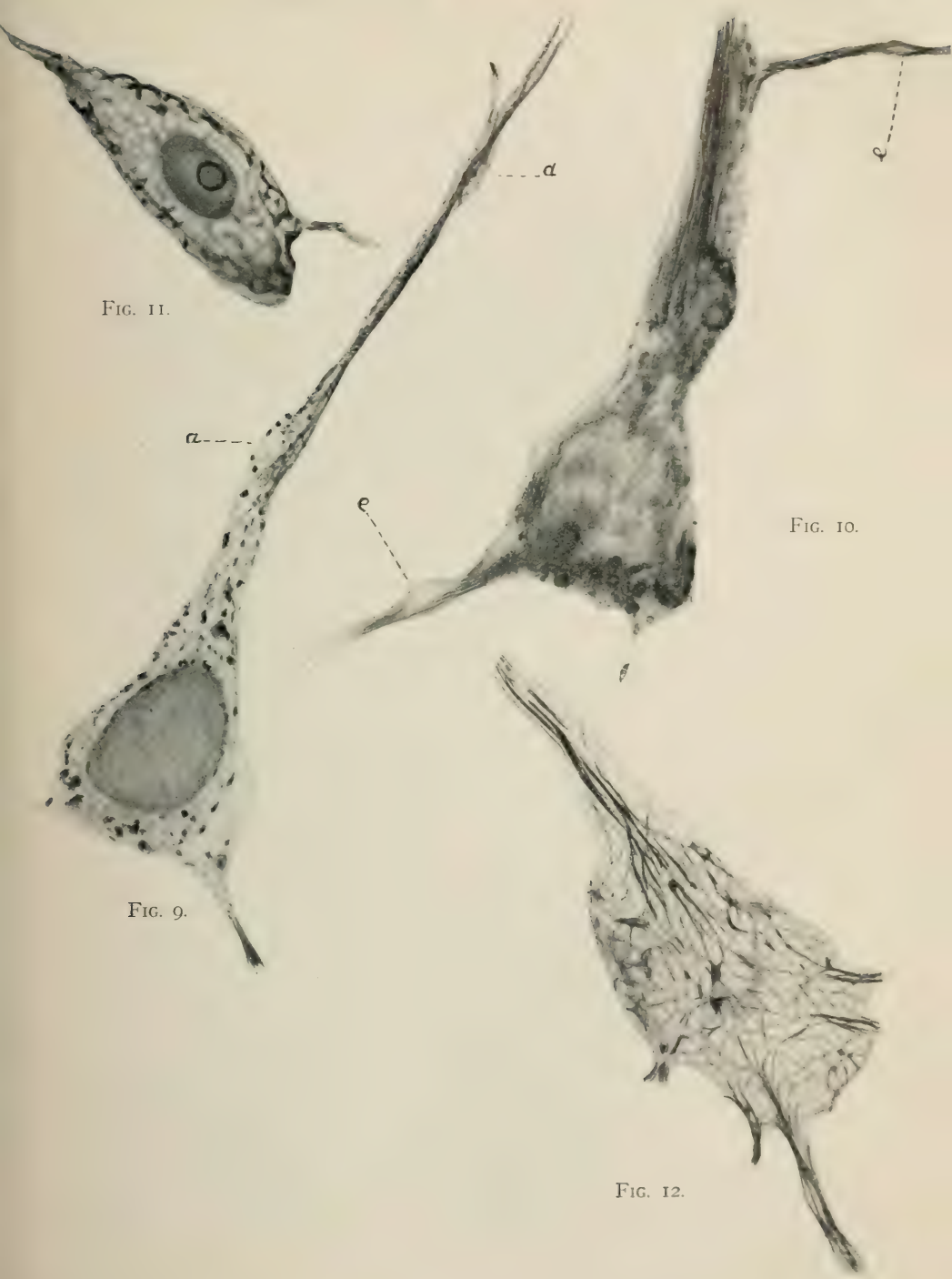


FIG. 11.

FIG. 10.

FIG. 9.

FIG. 12.

SOLOMON C. FULLER, M. D.

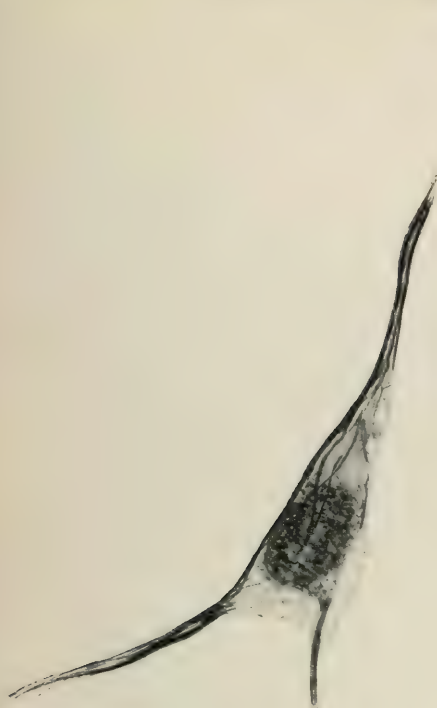


FIG. 13.



FIG. 15.



FIG. 14.



FIG. 16.

SOLOMON C. FULLER, M. D.

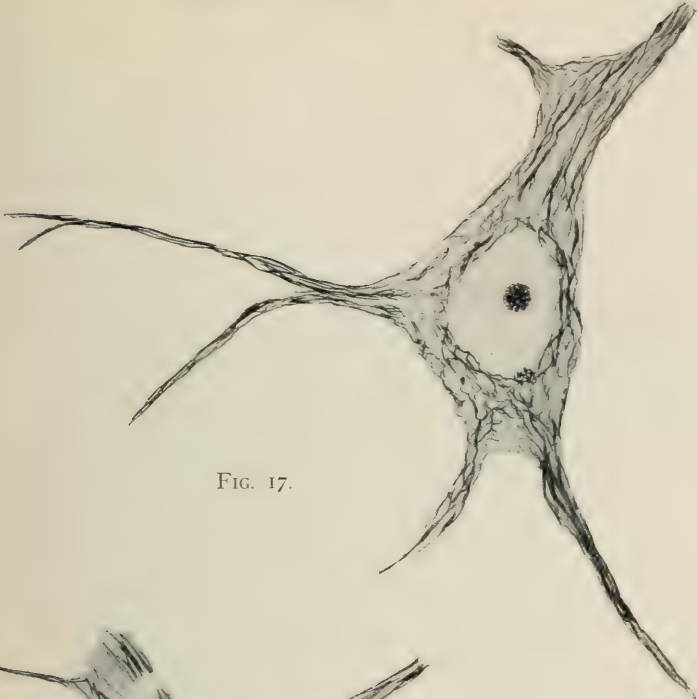


FIG. 17.



FIG. 18.

SOLOMON C. FULLER, M. D.

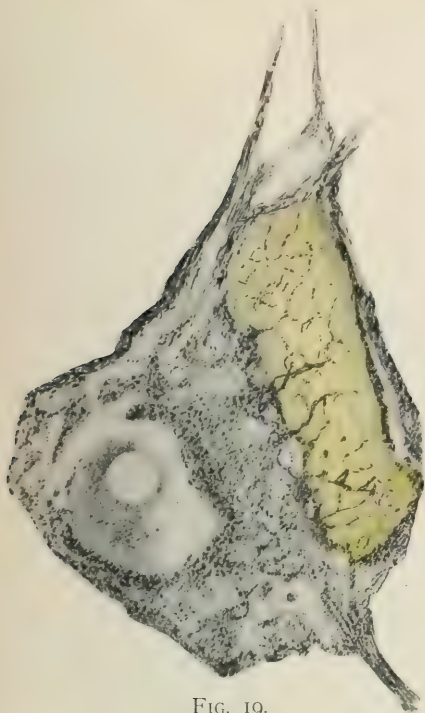


FIG. 19.



FIG. 21.

FIG. 20.

SOLOMON C. FULLER, M. D.

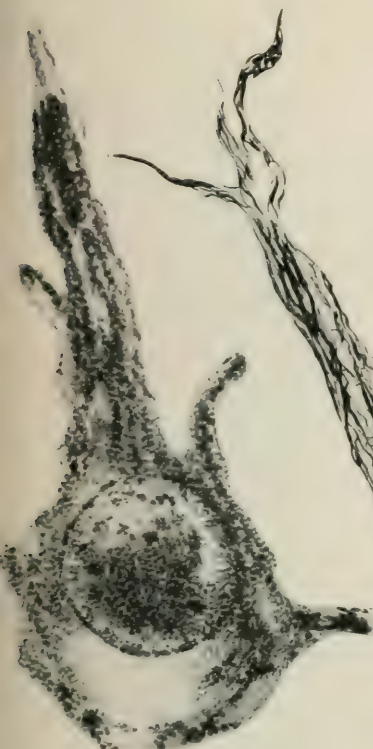


FIG. 24.

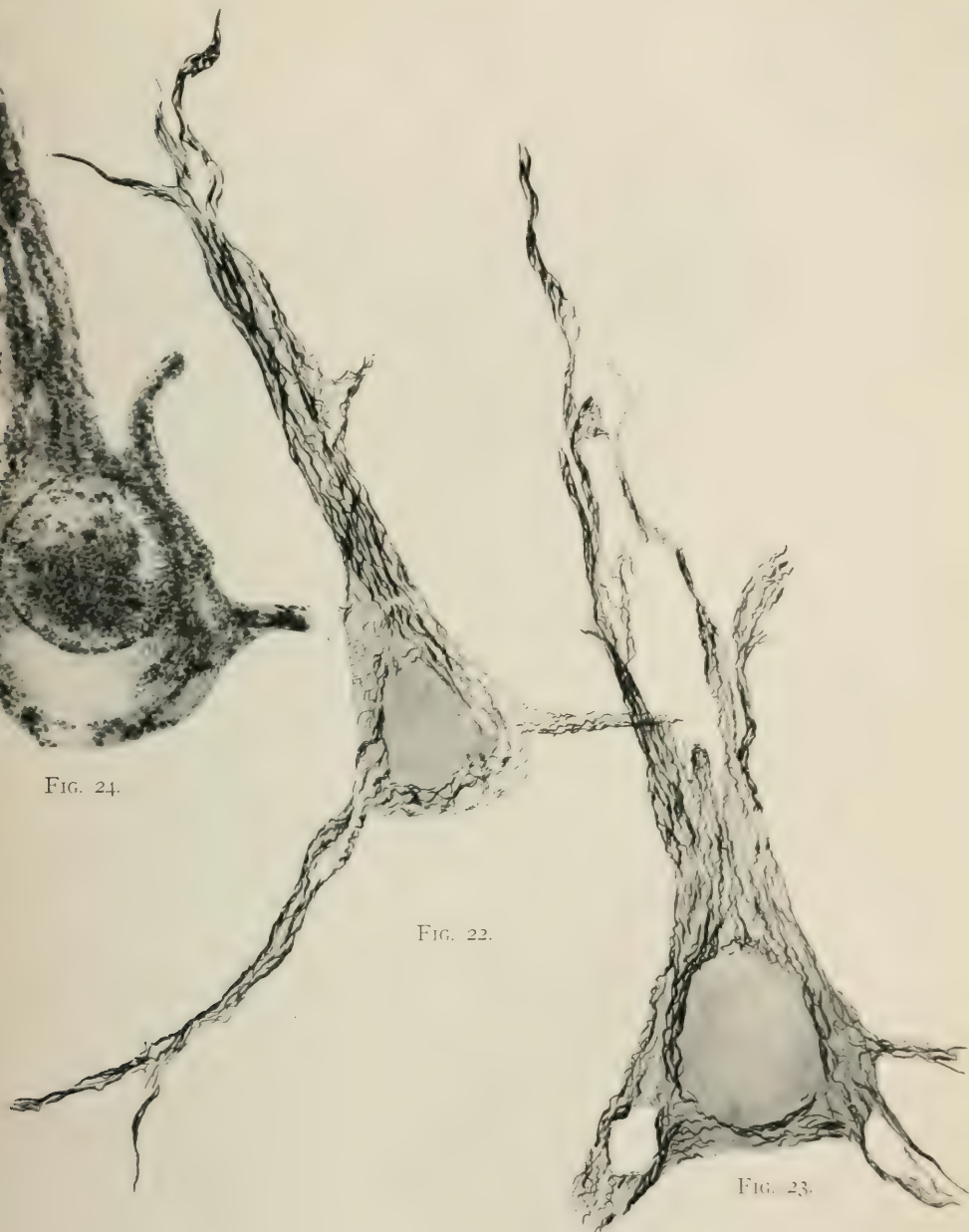


FIG. 22.

FIG. 23.

SOLOMON C. FULLER, M. D.

FIG. 27.

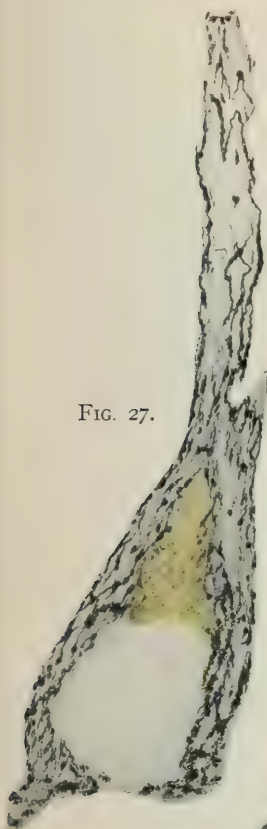


FIG. 25.

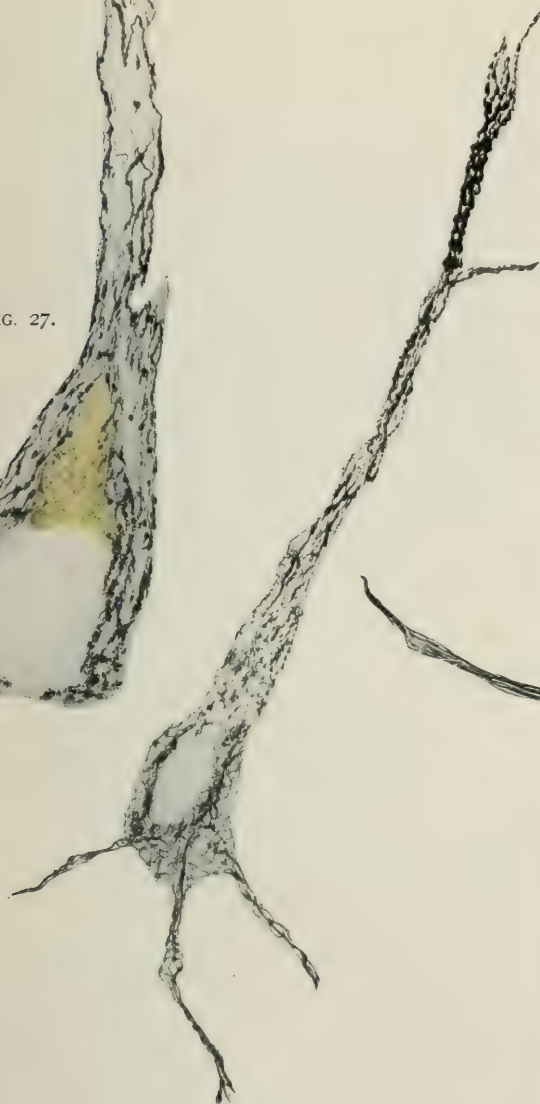
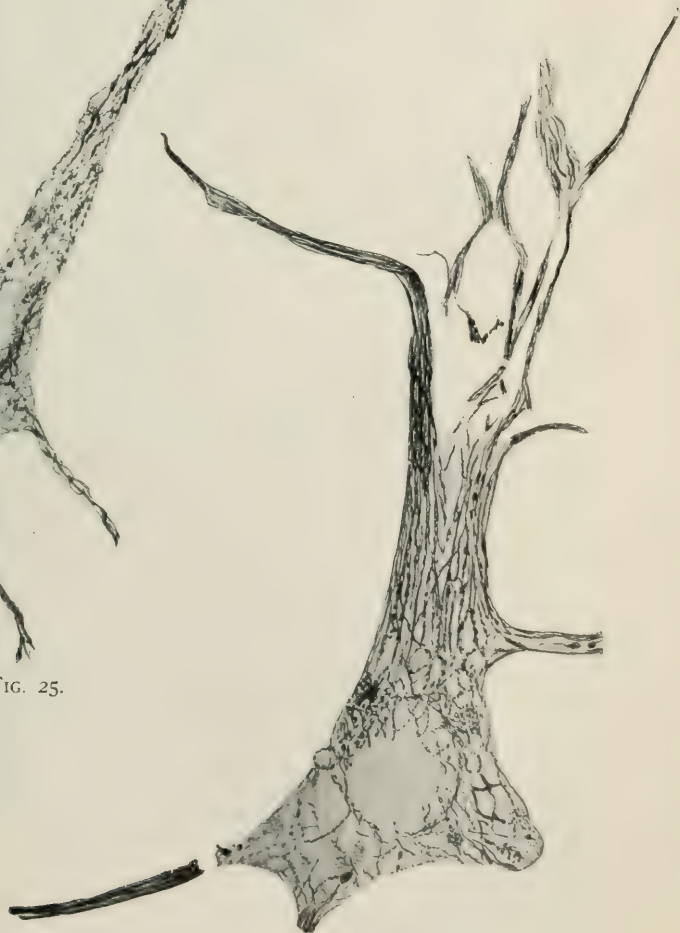


FIG. 26.



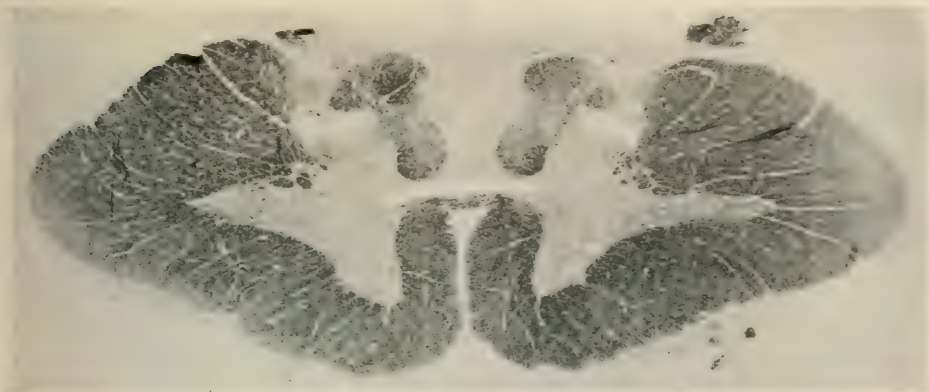


FIG. 28a.



FIG. 28b.

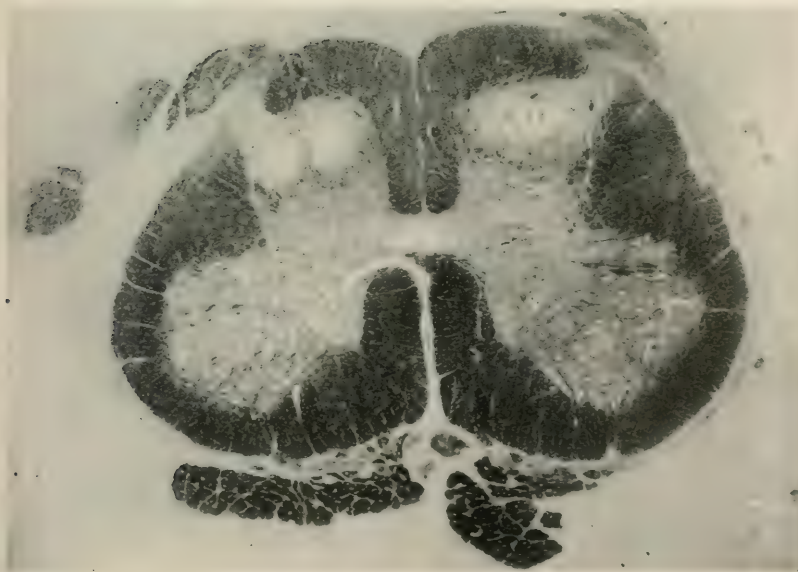


FIG. 28c.

SOLOMON C. FULLER, M. D.

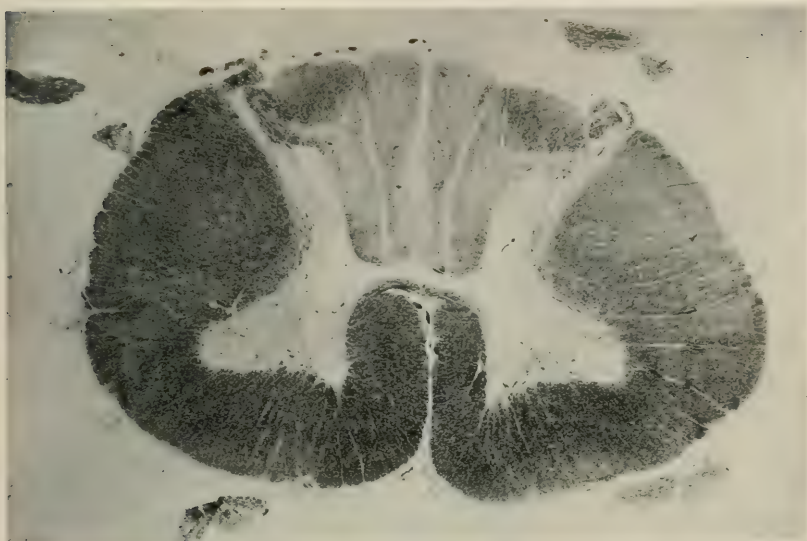


FIG. 29a.



FIG. 29b.

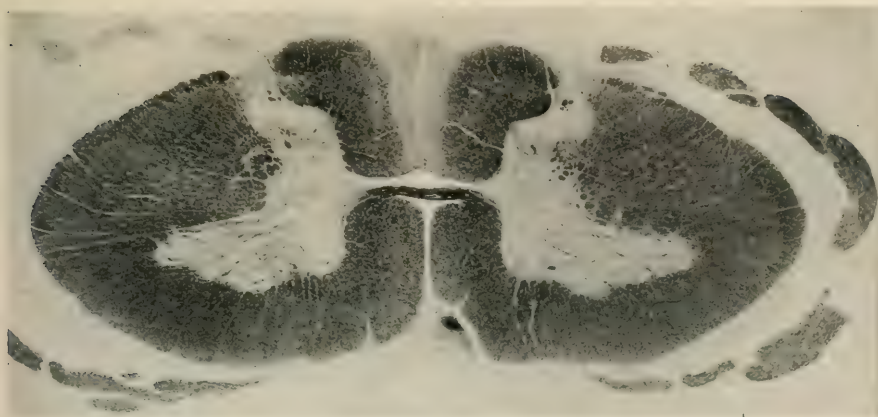


FIG. 30a.

Fig. 30a in reproduction has been reduced from the original photograph.



FIG. 30b.



APPLICATION OF THE COTTAGE SYSTEM TO THE NEW HOSPITAL.

By G. A. SMITH, M. D.,

Superintendent Central Islip State Hospital, Central Islip, L. I., N. Y.

In writing this paper I have confined myself to conditions that have appealed to me during my experience of over twenty years devoted largely to the colony system as applied to the care of the insane and which it seems to me has given most satisfactory results both as to treatment, occupation and proper classification of patients. The present colony system of this state, of which Central Islip is both the largest and latest, is very imperfect and I might say may be called only a half-tone picture with many imperfections. In building a new hospital advantage should be taken of the defects existing in Central Islip and other colony systems to avoid a repetition, so that the new hospital would be ideal.

The housing or collecting together of a large number of insane in one building or ward is an obstacle to individual treatment and is conducive only to general or treatment "en masse." This is particularly so among the chronic insane, which constitutes about 85 per cent of those committed to the hospitals. I have no doubt that the unfortunate termination of a large number of cases is due to this close association of great numbers. We are making rapid and satisfactory strides in improving the individual treatment among the acute insane, but after patients have been a year in the hospital—if they do not reach the convalescent ward—they are placed among the chronics. These are the cases that should receive our attention as well as the acute. It is a great mistake to lose interest in the medical treatment of a patient after he leaves the acute division, for I believe there is always hope of an ultimate discharge of many of these so-called chronic cases as "improved" if not "recovered," if we use the same energy in the matter of their treatment as we do in that of the acute.

The new hospital should consist of a colony made up of numer-

ous cottages, as it is a conceded fact that the cottage system is the best and many of the hospitals for the insane constructed abroad within the last ten or fifteen years have been arranged on these lines. The advantages are many and the disadvantages few, if any. Rational as well as scientific classification can be made possible and we are not forced to keep together the appreciative with the unappreciative, the quiet with the noisy, the tractable with the resistive, the honest laborer with the degenerate criminal, as we are compelled to do in large buildings or wards. The human mind even in its deranged state is often susceptible of impressions, good or bad. What impression can remain in the mind of the refined intellectual person after observing for months the bad manners and listening to the talk of his ill-bred associates? It surely does not contribute much towards restoration of his mind. In wards containing from one hundred to two hundred patients, such conditions must continue. On the other hand cottages would afford opportunity not only for a psycho-hygienic but also for a rational classification. Aside from the advantages of proper classification and reducing the number of patients to be associated together, the opportunity of changing patients from one cottage to another is of great importance; for often a patient is benefited by change of abode and association.

As to site. Not less than one thousand acres should be obtained of good farming territory centrally situated as to accessibility as to the district, not only for the reception of patients and the visitation of their friends, but also for the transportation of supplies. There should be a water supply of one million gallons per day. The question of sewage has absolved itself into a matter of good fall. I believe in all hospitals it should be treated before distribution and used for irrigation.

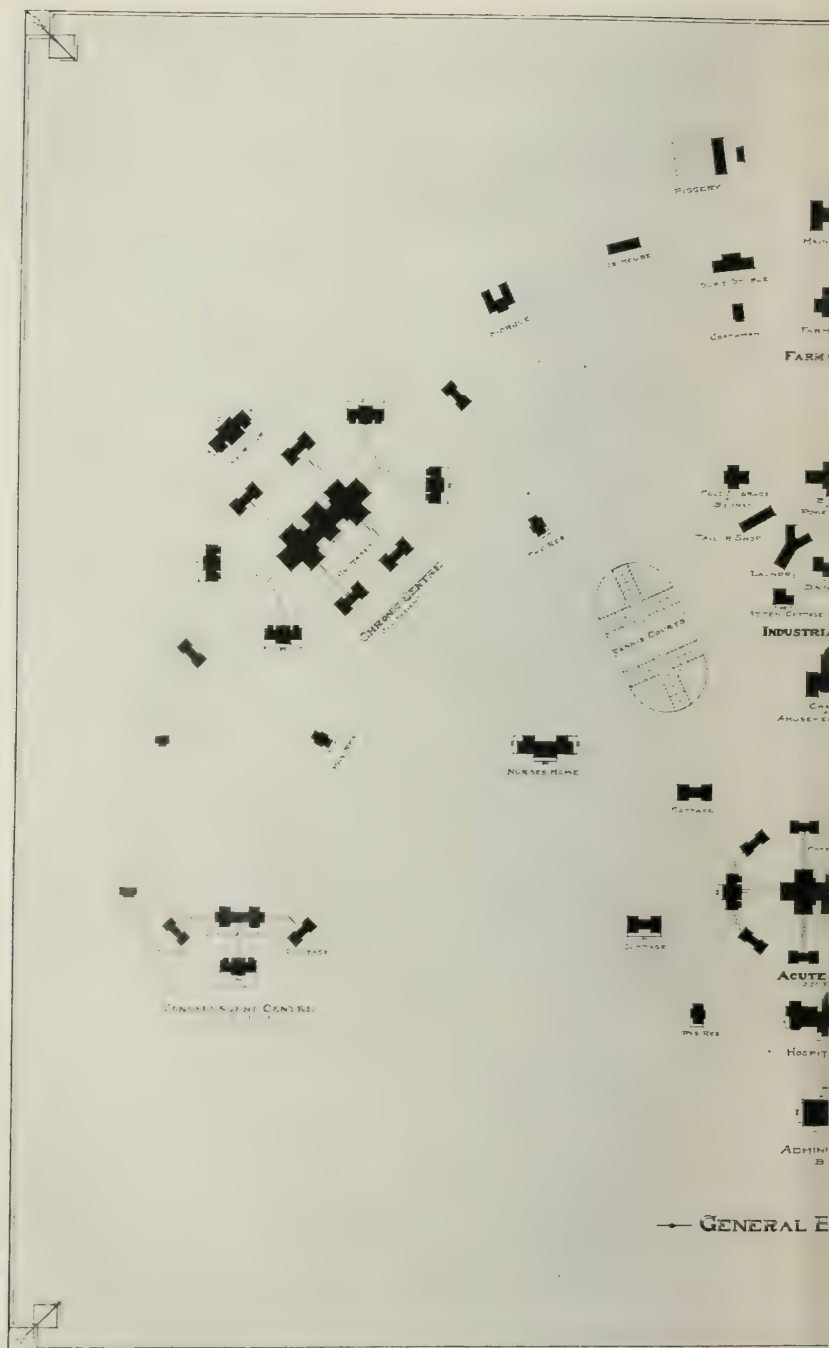
The hospital should not be too remote from some town to which the employees could have easy access for their recreation during the time they are off duty.

ARRANGEMENT OF BUILDINGS.

Near the most accessible or decided entrance to the hospital grounds should be placed the administration building. To the right, left and rear—approximating the shape of a fan with the

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

G. A. SMITH, M. D.



PLAN OF HOSPITAL IN COLONY SYSTEM, BY DR. GEORGE A. SMITH,



administration building at the handle—arrange the buildings in centers and groups, classified as follows: Acute, chronic, convalescent, industrial, farm and amusement centers. In the arrangement of these buildings I have considered economy as far as reasonable, avoiding duplication in the matter of equipment, centralizing kitchens, etc. The detail of buildings is omitted from this sketch, which simply shows the general arrangement. This can be enlarged or contracted to meet the capacity required. The diagram presented gives the general outline only and is not thoroughly correct as to distances—rather contracted.

Back of the administration building should be the acute center, arranging for the men on one side and the women on the other. This system of placing the sexes on either side of the line of the administration department is to be maintained throughout the entire arrangement. To the right and left of the acute I would place the convalescent centers; the chronic centers to be placed back in the grounds diagonally right and left of the administration—as before mentioned, men on one side and women on the other. The industrial center should be central to all. Here should be placed the power house, the electric light plant, the storehouse, laundry, shops, etc. Beyond this should be the farm center, stable, barn, piggeries, etc. The amusement center, consisting of hall, athletic field and tennis courts, should be placed between the acute and industrial centers.

This general arrangement would have to be modified to fit the conditions of the site.

The tuberculosis hospital should be placed remote from all the buildings in a desirable location as to elevation, etc.

ACUTE CENTER.

The acute center to consist of ten cottages with a capacity of twenty-five each, connected by corridors to six dining-rooms, allowing five cottages for each sex. The central building on each side to be the receiving cottage. In this central building should be the examining, hydro-therapeutic, physician's office, and record rooms; the other cottages to be arranged both for dormitory and single-room service. Each cottage should have a reception room for the purpose of visitation of friends. Small cottages, with a

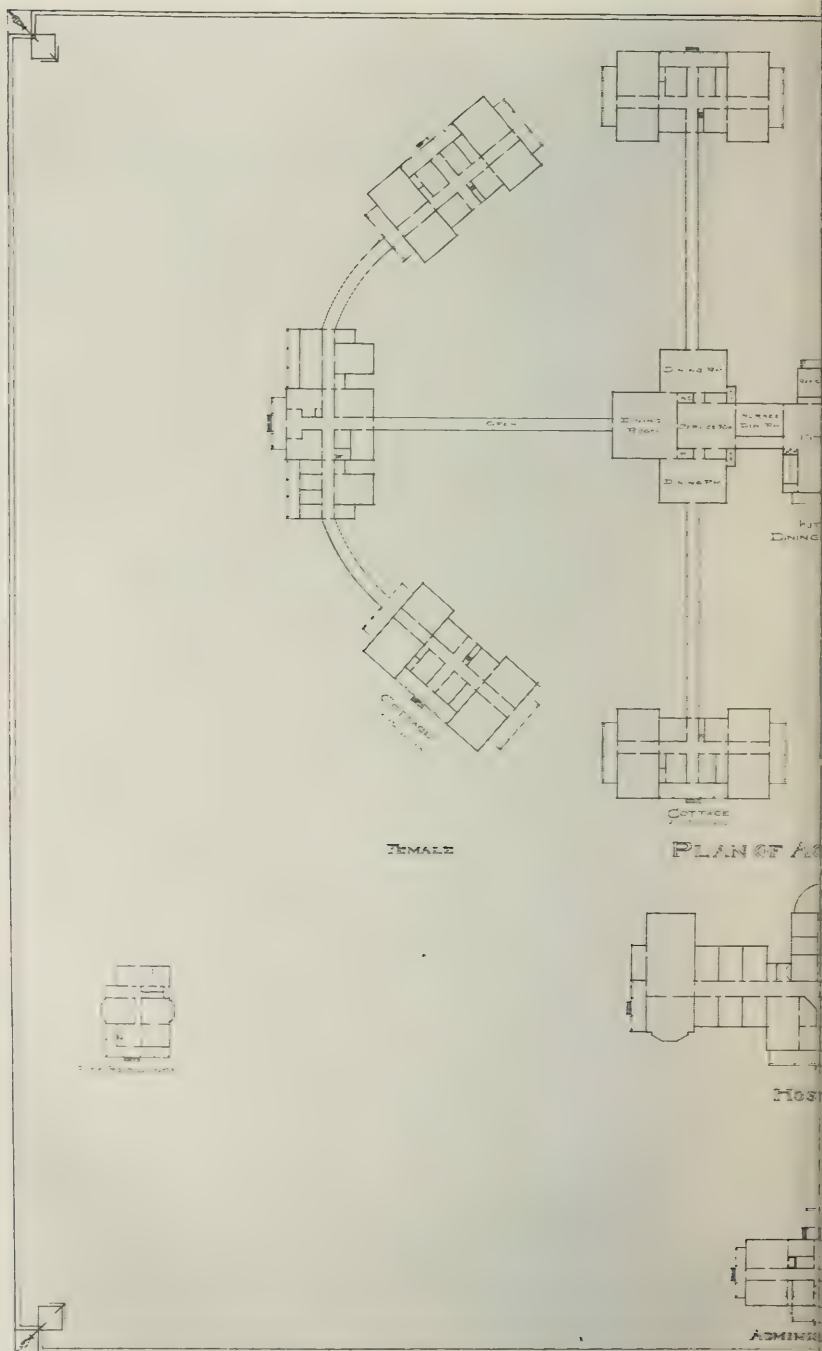
capacity of thirty patients, should be placed within easy distance from these buildings for workers (chronic cases), to assist in the domestic work in the acute and hospital services.' This arrangement would permit opportunities for classification of the patients not only in the different cottages but also allow it to extend to the dining-room. For classification amounts to nothing unless followed in every detail. In Central Islip this opportunity for classification is interrupted and set at naught three times a day by close association in the large congregate dining-rooms. Not that I am a disbeliever in congregate dining-rooms, but believe that they should represent patients of the same class only as far as possible. In close proximity to this group should be the acute surgical or hospital building, having a capacity of about eighty patients, with two wings—one for men and the other for women—extending from the central building. The central building to contain the general drug store, operating, static, dental and ophthalmic rooms. This building to be connected to the kitchen by underground tunnel and food distributed to each floor by elevators.

CONVALESCENT CENTER.

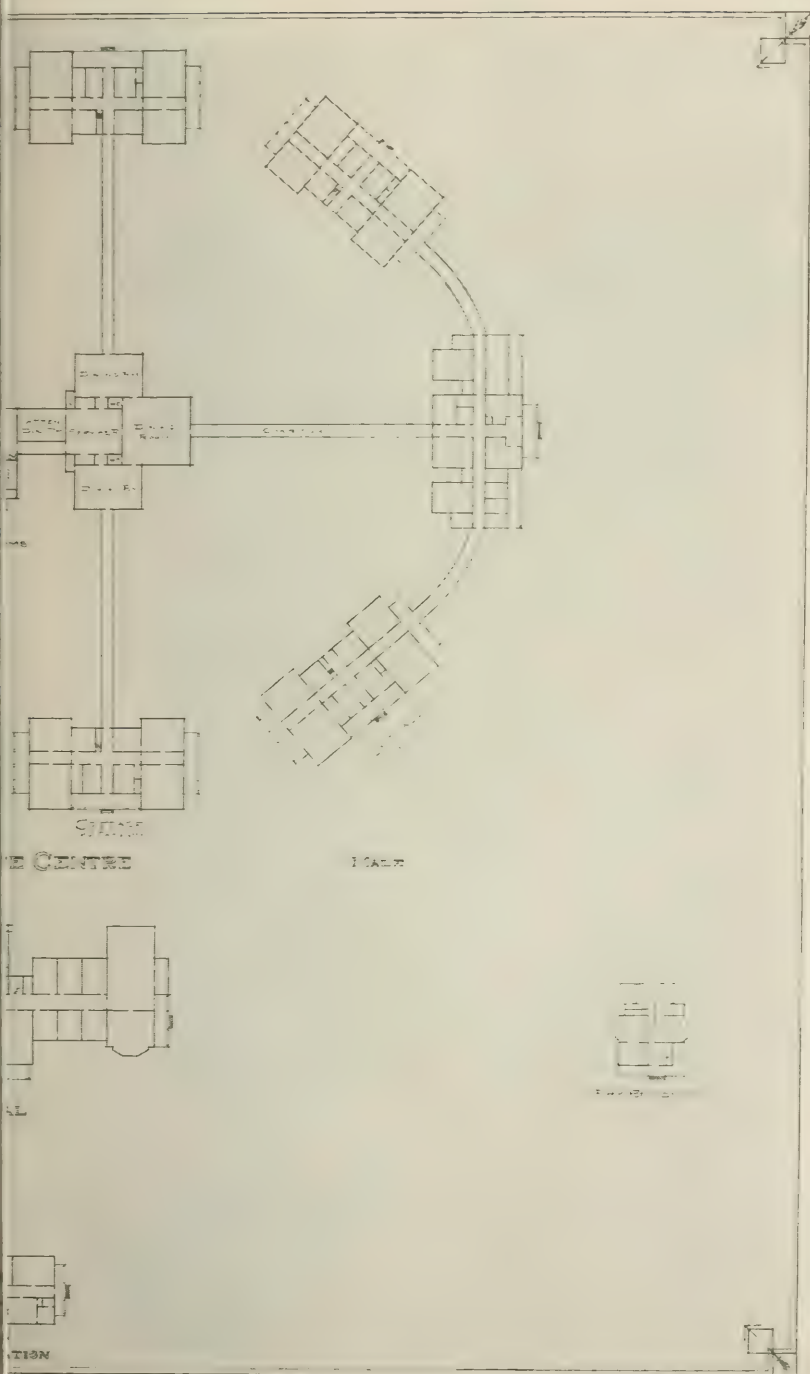
The convalescent center to be a group of three cottages of the pavilion type with a capacity of twenty-five to thirty patients in each cottage. There are two centers, one for men and one for women, arranged to connect with dining-rooms similar to the acute service, so that even here the social classification could be carried on to the dining-rooms. For it is distressing to see the unappreciative resident of the slums sitting side by side with the appreciative resident of respectable society. This center is an important one. The surroundings should be as pleasant and home-like as can be made and everything that savors of hospital life should be eliminated as far as possible. Patients should have full liberty and there should be a relaxation from the general rule. We have a ward at Central Islip, which has received the name of "The Pines." There is but one attendant connected with the ward; the patients virtually take care of themselves and the ward; they have a reception room, with card tables, smoking-room, with cozy corner. No doors are locked and they go to and from their meals in a special dining-room unattended, and those who are not

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

G. A. SMITH, M. D.



PLAN OF HOSPITAL IN COLONY SYSTEM, BY DR. GEORGE A. SMITH,



PERINTENDENT CENTRAL ISLIP HOSPITAL, CENTRAL ISLIP, N. Y.

detailed to the ward are occupied during the day at such occupation as is best suited to their taste. After they leave the hospital their last impression is a memory of "The Pines."

CHRONIC CENTER.

The chronic centers should consist of two groups of eight cottages each, one for men and one for women, having a capacity of fifty patients in each cottage, connected by corridors to six dining-rooms—similar to the acute centers. In addition to the eight cottages of these groups there should be one or two smaller cottages, having a capacity of twenty-five to thirty, for special cases. An infirmary building, fireproof, with a capacity of seventy-five patients, for the bed-ridden, should be placed in close proximity to each of these centers. The arrangement here should be similar to that of other centers, for the purpose of classification. In all the cottages of this center I should arrange for an extra room to be attached to each cottage for the purpose of occupation by patients who do not go to either the industrial center or the grounds for occupation.

INDUSTRIAL CENTER.

The industrial center consists of the boiler and power house, bakery, storehouse, laundry, and shops. I have placed the power or steam plant in the center as a matter of economy and efficiency, for it is cheaper to bring your fuel to the center than to force your steam long distances only to get wet steam and inefficient heat at the terminals. At this center should be a cottage for about thirty to fifty patients who are specially selected for employment around the industrial buildings as assistants to the mechanics, etc. These patients should have special diet and their dining-room should be in connection with the employees. An employees' cottage should be situated in this center as well as the central dining-room and kitchen.

FARM CENTER.

At the farm center we have the barn, stable, dairy barn, poultry, piggery, and granary, a farmer's cottage and coachman's and stableman's cottage. Here also we should have a cottage with a capacity of from thirty to fifty picked patients who will work as

farm assistants. To these centers should be attached a small kitchen and a dining-room of sufficient capacity for patients and employees of this center.

AMUSEMENT CENTER.

The amusement center is situated between the industrial and the acute centers within easy access of the convalescent and chronic centers. This center should consist of an amusement hall—which can be used both for entertainments and religious services—an athletic field and tennis and croquet courts. This center is a very important one. At Central Islip we hold weekly dances and entertainments during the winter months in the amusement hall; in the summer months Saturday afternoon is set aside for athletics and baseball. An average of 2200 patients attend these field and baseball games and daily there is a certain number of patients that are at recreation either at the tennis or croquet field.

ATTENDANTS' HOME.

There should be two attendants' homes, one for men and one for women, on either side, situated centrally between the acute, chronic and convalescent centers. In the industrial and farm centers a third story could be built and used for this purpose over the cottages occupied by the patients. This arrangement could be made as well in certain buildings of the chronic service, especially in the infirmary, so that attendants would be within easy call in case of emergency. As to kitchens, there will be three large kitchens, one for the acute and two for the chronic centers—and three smaller kitchens for the convalescent and industrial centers.

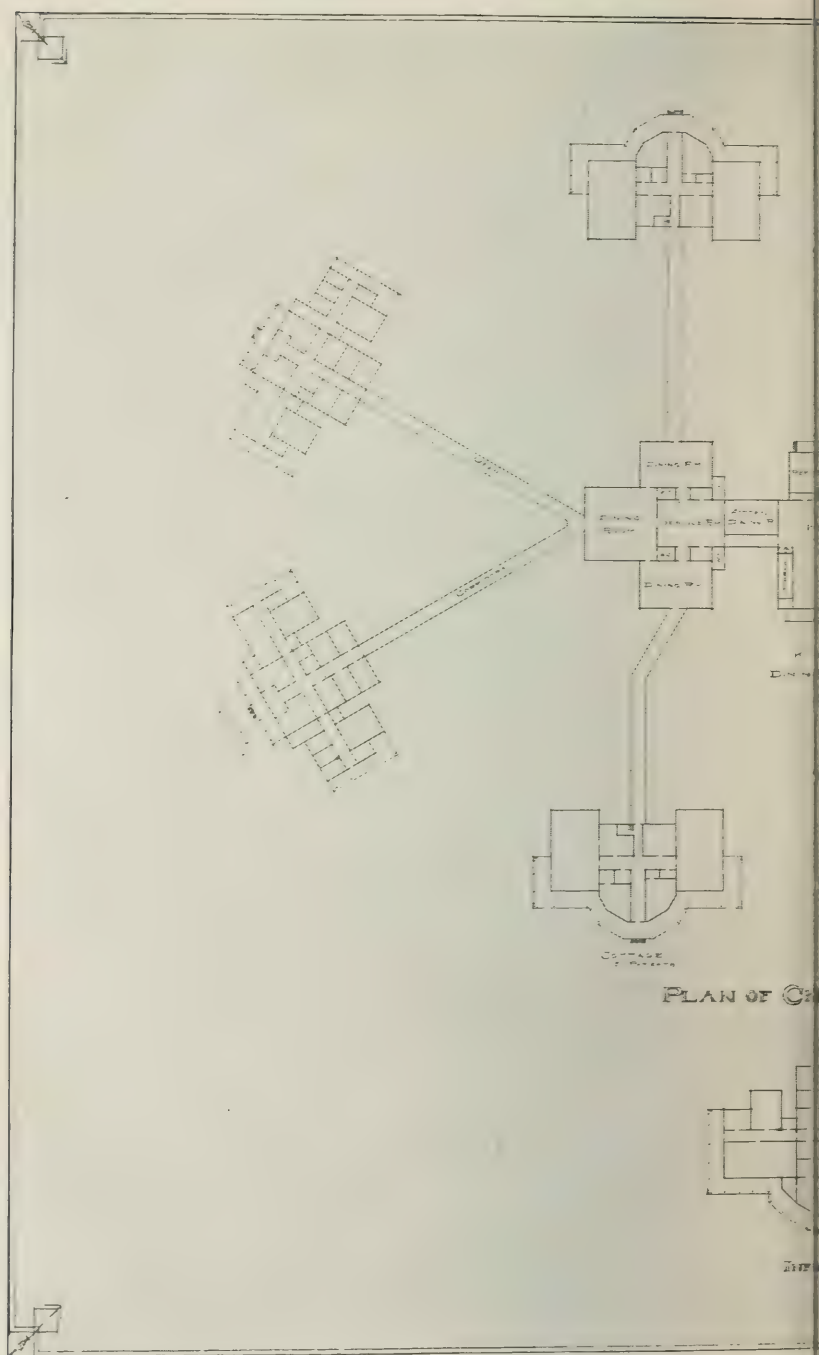
PHYSICIANS' COTTAGES.

Physicians should reside in cottages outside of the buildings. These cottages to be situated conveniently to the different services.

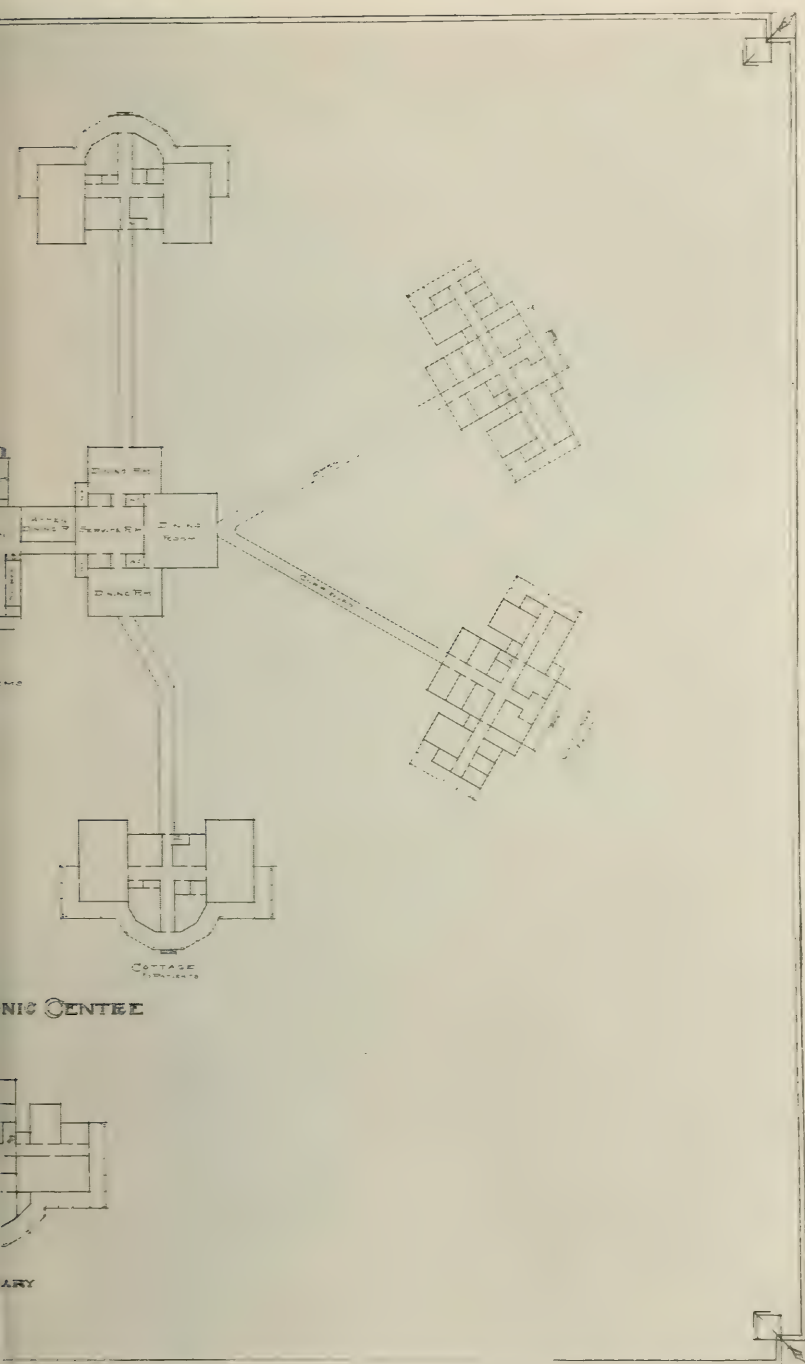
ADMINISTRATION BUILDING.

The first floor should be arranged for superintendent's office, first assistant physician's, steward's, clerks, telephone and telegraph offices and reception room. The second floor for medical library, board room and hospital library. The other floors to be arranged for spare rooms and for clerks and stenographers.

G. A. SMITH, M. D.



PLAN OF HOSPITAL IN COLONY SYSTEM, BY DR. GEORGE A. SMITH,



MISCELLANEOUS.

While on the subject of construction I would like to lay particular stress on the necessity of having a sufficient number of lavatories and closets. The rush, crowding, and clamoring of patients to reach the closets and lavatories, which are inadequate to meet this sudden onslaught, during the early morning or getting-up hour, is the most distressing sight that occurs during the entire hospital service. There is too much centralization of lavatories and closets for economy's sake. It is much better to arrange these at each end and then divide the patients, thus avoiding the crowding at one center. A separate individual bathing department should be connected with each cottage or pavilion. Large congregate bathing departments are not conducive to modesty or thorough cleansing. It might do for prisons but not for hospitals.

Every cottage should have large, wide verandas, which could be enclosed with glass during the winter months.

FINAL.

A hospital arranged like this would give an opportunity for almost perfect classification of patients as well as facilitate the various forms of treatment especially in the matter of occupation and diversion, which I consider to be of more importance than drug treatment. I have found that after the acute stages the earlier the patients are placed at some rational occupation or diversion the better.

When the machinery starts in the morning, the picked farm patients will leave their cottage for their special duties; the picked patients at the industrial center to theirs; those at the chronic centers go to their different occupations, some to the farm, gardens, grounds, industrial center, leaving the ward workers or housekeepers to clear up the cottages for their return. The convalescents, such as are not detailed for work at these centers, report to their special occupation, while others will seek diversion at the amusement centers.

A colony arranged on this plan would be conducive to normal, rational and scientific treatment where there would be nothing insane except the patients.

DETERIORATION AND PRACTICAL PSYCHIATRY

BY JOHN RUDOLPH KNAPP,

*Assistant Physician Manhattan State Hospital, Ward's Island,
New York City.*

In the study of mental deterioration it is of vital importance to bear in mind the psychological principles involved in order to arrive at a correct estimate of the degree of enfeeblement.

Psychologists have taught us that the mind is that which thinks, feels and wills, or in other words, the mind is made up of the elements of feeling, intellect and will.

Feeling is a stirring of the mind connected with some need or activity either of a psychical or physical nature and usually accompanied by pleasure or pain and, in the higher forms, preceded by knowledge and leading to volition.

The intellect is that faculty of the mind that knows, as distinguished from the sensibility that feels and the will that chooses and resolves. The intellect acts as a cognitive faculty or faculty of immediate knowledge, a presentative, observing or conservative faculty—memory, a comparative or generalizing faculty—thought, and a constructive, representative, or creative faculty, imagination. Judgment, abstraction and reason are attributes of the intellect.

Judgment is the faculty of comparison in which conceptions are compared and their logical agreements or disagreements apprehended and mentally asserted. Insight is a cognitive faculty, or power of immediate and acute perception or understanding. The will is that faculty of the mind which makes choice of its ends of action or is that faculty which chooses and resolves. It is the psychomotor element of mental life.

A little reflection will convince that the observing or presentative faculties of the intellect are the first in grade of development; these are directly followed by the conservative faculty and together memory is formed. Later, abstraction, reason, imagination and judgment result. The faculty of memory is therefore very low in the grade of intellectual development. Memory defects

are seen in the inability to retain new impressions or in the loss of those that are recent. First impressions are longest retained. In cases who have recovered with loss of memory for a period of years, the lost time comes back in the order from the past toward the present. Retention is the capacity by which knowledges are kept in mind out of consciousness for reproduction. Recollection is the recall into consciousness with volition and effort the objects of past cognition. Memory, like other mental actions, has its physical side; every functional state of the nerve elements leaves behind it a nutritional change or residual state, in consequence of which the same functional action occurs more readily than before and this residual disposition is increased by repetition. The residual disposition in the cells that act during mental processes influences the revival of those processes in memory. The sequence of action of groups of nerve cells is the physiological aspect of that which we term, physiologically, the association of ideas.

Any disease of the brain may involve the faculty of memory whether it be coarse, organic disease, or finer degenerative processes. Moreover, temporary malnutrition as from acute disease or pronounced anæmia may have the same effect.

Acute psychoses which are recoverable, if associated with clouding of consciousness, malnutrition and anæmia, likewise involve memory. Hence it is the permanent loss that points to deterioration.

Practically we are frequently called upon to differentiate retardation from want of impressionability as said to be evidenced by apathy and lack of initiative. In many cases, for the time being, this is well nigh impossible, owing to the fact that these conditions are met with in retardation and also that the finer psychological phenomena, although discernible in the sane and certain of the insane, are in many states of mental alienation masked by inaccessible conditions, clouding of consciousness, stupor, etc., and are therefore inadequate for clinical demonstration. Great difficulty is also often experienced when lack of attention is the result of domination of the mind by one idea, thereby excluding all other concepts from the field of consciousness and thus simulating intellectual defect when in reality none exists.

In all abnormalities of the mind it is necessary to remember

that as the intellectual faculties are the last to be developed, as compared to the feelings or emotions, they are the first to become involved in cerebral reductions. The feelings or emotions suffer secondarily, although failure to recognize the intellectual impairment often gives a seeming priority to the emotional disturbance.

The cortical nerve cell represents the sensory unit, the feeling or emotional element of mind, the cell processes connecting the sensory units; the relational or intellectual element. It is in this way that one state of feeling through the operation of the intellect can be transformed into another. In tracing all cerebral reductions through states of depression, states of exaltation, delusions, development of the ego, dementia, etc., it is found that failure in the cognitive relational or intellectual element of mind is the first to wane, and that the disturbance of the emotional element is secondary and dependent upon the primary decline of the intellectual. This follows the law of dissolution in that the last evolved elements in the grade of development are the first to succumb.

Pathologists have taught us that in atrophic states of the cerebral cortex following acute psychoses, the peripheral cortical zone is much more liable to be involved than the deeper structures; that the unprotected processes of the cells are chiefly and primarily involved. In other words, the structure upon which the intellectual element depends is first to show degenerative changes; hence the primary intellectual impairment. The term deterioration in the study of diseases of the mind seems to have been used in ways other than that suggested by its etymological derivation. It is derived from the Latin *Deterior*—worse. It literally means a growing worse. It does not imply a temporary process, or one that would be followed by rapid or gradual recovery, but one from which there is no restoration. If taken from the standpoint of the normal mental life, a delusional state, or other cerebral reduction, would be a step in the deteriorating process; but when a patient is deteriorated, it implies an impairment from which there is no restoration. Its application in psychiatry, however, is to embrace any state of mental enfeeblement whether of the emotional, volitional or intellectual spheres.

The older authors speak of states of mental enfeeblement, including in these, states of acquired defect, comprising conditions where the enfeeblement is persistent, whether of primary origin

or following acute insanities and including paranoia, chronic maniacal conditions and dementia. Weak-mindedness as embraced in states of congenital and developmental arrest were not so classed for the reason that they are not strictly states of mental deprivation. The significance of the term deterioration, therefore, in its practical application, is somewhat broad and it would seem that its use might with advantage be more restricted.

As alienists we are confronted with many practical questions, medico-legal and otherwise connected with the process of deterioration and it is of the utmost importance that the condition should either be established, or its probability be suspected. Deterioration occurring at different periods of life presents many points of scientific and practical prognostic interest. Occurring at an early period, it is extremely interesting and on account of the limited intellectual development and preponderance of the feeling element, is often characterized by a greater variability of the emotional tone and consequent overshadowing of the intellectual involvement. Occurring at the middle period of life, intellectual impairment and emotional instability often run hand in hand, but on account of favorable nutritional and functional conditions, the process may be held in abeyance and frequently its manifestations not be apparent.

Deterioration occurring at the later period of life is closely connected with physiological decay, but when it exceeds these limits its practical importance confronts us. And it is at this period after the intellectual faculties have reached their fullest development, as second childhood approaches and the feeling elements are once more prominent, that disturbance in the emotional and volitional spheres assumes vast importance, and is often the forerunner of a grave intellectual deterioration that the nervous resistance and well-formed habits of a once vigorous intellect long withholds from view.

Deterioration, particularly in early life, often follows stuporous conditions and is consequently secondary to previous mental reduction, although clinically the suddenness of onset with scant observance of the early psychical involvement causes it to be termed primary. States of stupor are the resulting manifestations of exhaustion in certain areas which have rapidly discharged their energy. A slight impairment of intellect in individuals of un-

stable mentality, *i. e.*, those in whom the emotional and instinctive elements predominate, will be followed by a much greater disturbance in the emotional and volitional spheres, (more especially if the field of consciousness is dominated by a delusion, thus permitting a free play of the emotions) and the degree of intellectual impairment may be such that restoration will follow: hence the difficulty in hysterical, excitable, retarded and katatonic cases to prognosticate that permanent intellectual deterioration will ensue. Prolonged excited or stuporous states indicate that cortical areas have too frequently discharged their energy and a condition of exhaustion has supervened, thus making the deterioration of intellect more probable.

In the study of mental alienation with its frequent subsequent deterioration, the conduct of a patient the subject of a psychosis is an important consideration. Conduct is the outcome of volitional acts and represents the result of the struggle between contending forces. Every act, when once performed, leaves behind a residual state or sort of motor memory. These are represented in consciousness. Likewise, when action is determined upon, it is the result of domination by one of a number of ideas generated in the intellect and influenced by excitations of a motor or residual character. In depressive states there is a feeble representation in consciousness and a feeble contrasting thought. Hence, the resistiveness as seen in these states. Also these resistive, stuporous and katatonic states are very similar and closely connected with impairment of the muscular sense, or that intellectual faculty whereby we appreciate the form and musculature of the body and which, in the normal state, is controlled by inhibitory influences. In maniacal states where there is a deeper intellectual reduction, this inhibitory control is lost with the result of volitional acts of the opposite character.

The muscular sense is low in the grade of intellectual development and it would seem that for this reason considerable involvement of this sense, coupled with enfeebled thought and slight motor excitation resulting in volitional disturbance, would not always be followed by grave degrees of intellectual impairment. Katatonic states and foolish actions would, therefore, seem best to be viewed with caution ere an unfavorable outcome is predicted, for on the clinical side it is not uncommon to see psychoses pass

through stuporous and katatonic states with perfect recovery and the psychoses of early childhood which usually pass to a favorable termination are prone to a preponderance of volitional involvement of a maniacal character.

Recently a British writer has called attention to the psychic relationship between certain recurrent forms of insanity and the lapse of control over the emotions, words and actions which occur in the normal individual, and states the fact that the ordinary sane person usually exercises relatively little voluntary control over his emotions or intellectual processes; citing as examples the excitement or depression lasting for hours or days after startling occurrences. The reticent or incessant talk in the presence of strangers, the tendency to gossip over matters which should be kept secret, a girl's excitement before a ball or the advent of a new gown; a man's excitement over a game of football or cricket, being a nuisance to his friends for days after; the exhibition of violent passions or sulks over trivial occurrences, and the tendency to go on a "spree" as a natural reaction to prolonged application to work or undue restraint.

It is, then, the comparison to former conduct, duration, accompanying symptom-complex and period of life of the individual, rather than the specific character of the actions, that points the way to the existence of a deteriorating process. Therefore, in many cases, an element of time is absolutely essential in order to establish permanent mental deterioration. This is rendered all the more difficult as the nervous resistance is of variable degree, modified by various constitutional and acquired conditions which may long be operating factors in restoring affected centers to a condition of health, or put off for a longer or shorter period the process of deterioration. In these cases of doubt, where the intellectual deterioration is not definitely established, it would seem that the condition of the emotions and the attending volitional involvement should be characterized by emotional and volitional disturbance, specifying the character, duration and comparison to former conduct and not emotional deterioration; and the intellectual involvement as clouding of consciousness, irrelevancy, delusional formation, lack of association of ideas, etc., as the case may be thus denoting the depth of cerebral reduction, the etiology, history and duration furnishing a clue as to the degree of enfeeblement; and

the term deterioration reserved for that deeper involvement of the intellect, the chief of which, as a symptom of atrophy and degeneration and which for all time alters the patient's relation with the outer world, is permanent impairment of memory. Patients born in the lower strata of existence exhibit a sharper line of demarcation between the intellectual and emotional and volitional manifestations, whereas in the higher grades of intellectual development in which the refinements of civilized life, coupled with the results of ancestral experience have left their imprint, show a closer blending of the intellectual and emotional elements and those of the intellectual or cognitive will predominate. Hence, the difficulty, in highly intellectual cases, to estimate the finer intellectual and memory defects.

Although theoretically the recognition of deterioration presents many difficulties, yet clinically, there are certain conditions and manifestations that, if correctly interpreted, may point to a correct diagnosis. In deterioration occurring at any period of life it is seen that bodily conditions often have a marked effect upon mental states and are frequently the determining factor in prognosticating permanent mental deterioration. In early life prolonged cessation of the menstrual function will in all probability influence the case badly. Early vicious habits on the part of the individual will often prolong a psychosis which may ultimately end unfavorably. Masturbation and venereal excesses if persistent, are unfavorable factors. The use of alcohol or drugs which, if not a determining cause, may by their toxic action have produced a deteriorating effect. Prolonged exhaustive states prior to the onset of the psychosis are often determining factors in prognosis. Congenital and developmental arrest presents an extremely difficult problem. The stigmata of degeneration, asymmetries, etc., are not always safe guides in prognosticating that deterioration will follow, as there are few normal individuals who do not present deviations from a symmetrical standard. In marked anomalies, however, the question of arrested development or inferior constitution should be considered, and particularly, pronounced nervous and mental peculiarities, constituting the so-called neuropathic state.

Observers have investigated and written at considerable length upon the subject of primary degeneration of the nervous elements. They have shown that in some cases of developmental arrest cer-

tain cells have been found which presented a pigmented and characteristic appearance; but these were only observed in cases of epileptic idiocy. These cells, however, even when the case observed had lived to an advanced age, preserved the same characteristics as the same type of cell seen in similar cases dying at an early period, and did not exhibit the characteristic picture of cellular involvement as seen in that transformation which follows the psychoses, or of the granular degeneration following senile atrophy, the convulsive storm being the determining factor in arresting their development. This would indicate that an engrafted psychosis is the initiative stage of a deteriorating process and that the brain cells of an individual, although the subject of developmental arrest, are not pathologically degenerated from birth. Developmental defects may, for a long time in many cases, ensure the persistence of volitional disturbances. If the psychosis continues and no modifying influences on the part of the nutritive and circulatory functions are brought to bear, an unfavorable termination may be predicted.

In the psychoses of middle life, certain physical conditions have a pronounced bearing. Cases of Bright's disease upon which a psychosis has been engrafted have long been well-known to exert a deteriorating effect. The existence of cancer, tuberculosis, syphilis and other diseases of this class which produce marked dyscrasia are usually important factors in estimating a probable deteriorating process. The history of such constitutional diseases in the ancestry is also to be carefully considered.

In the psychoses of advanced life the presence of marked arterial degeneration as evidenced by contracted and spastic pupils, tremor, thickened arteries, varicosities, increased arterial tension, narrowing of the features unattended by grave anæmia, with diminished nitrogenous metabolism and possibly albuminuria point to deterioration, even if the intellectual impairment is not demonstrable. In these cases, departure from former habits of conduct associated with a variable emotional tone are valuable symptoms. A lack of muscular resistance and marked muscular relaxation, particularly if accompanied by lack of facial expression and a tendency for the chin to fall on the breast, and associated with insensibility to extreme degrees of heat and cold and electrical stimulation, are clinical symptoms of a grave character.

A continued state of uncleanness with disinclination to swallow the saliva, resulting in the dribbling of this secretion over the chin and clothing, associated with general apathy as manifested by bodily indifference, disinclination to seek food, yet when it is placed before them a tendency to gluttony, and the indisposition to complain if ill with bodily disease, point to an unfavorable termination.

Gradual and pronounced clouding of consciousness with a slow, soft pulse and a tendency to sleep profoundly are very unfavorable symptoms.

A persistent weakness of cardiac action with tendency to cyanosis and œdema of the extremities and serous cavities, indicates that the cerebral blood vessels are also in a passive state and that mental deterioration is likely to ensue. A marked degree of anæmia which is little influenced by treatment is a bad symptom.

An increase of the bodily weight with no improvement of the mental symptoms, particularly if attended with marked increase of fat, is an unfavorable symptom.

Persistent subnormal temperature indicating that the vital processes are at a low ebb is an unfavorable omen. On the other hand, elevation of the bodily temperature from disturbance of the heat centers is an indication that the psychosis will terminate unfavorably.

A tendency to collect trash late in the psychosis—eating disgusting things and drinking their own urine are well-known symptoms of deterioration.

A general feeling of willingness with inability to execute commands, associated with lack of temper upon irritation, are signs of intellectual decay.

Lack of modesty, perverted feeling, evil inclinations, a tendency to form new words and mental incoherence, if continued and exhibited after states of emotional excitement, are indications of deterioration.

Imperative impulses, blind, unreasonable and uncontrollable violence are evidences of a probable deterioration.

A psychosis developing in one who has lost both the senses of sight and hearing, or these senses becoming lost after the onset of the psychosis, is liable to result in deterioration.

Hallucinations or illusions of several senses is a very unfavorable symptom.

A psychosis passing through the climacteric and showing no tendency to mental improvement indicates an unfavorable termination.

Should a psychosis develop in a case of epilepsy, a favorable termination may be predicted, if the bodily weight increases and the seizures become less frequent. But as a rule a psychosis, if attended with epileptic seizures of more or less frequency, or there is the occurrence of cerebral convulsions of other character, a deteriorating process is likely to result. Likewise nystagmus, strabismus, contractures, stuttering chorea, convulsive tics, etc., are all evidences of either degenerative traits or indicate the neuropathic constitution, and in such the prognosis should be guarded. Trophic disturbances, as bed sores, pemphigoid bullæ, and gangrene are evidences of advanced deterioration.

Aphasia, speech defects, grinding of the teeth, ataxia of gait, loss of bladder and rectum control and paralyses are usually evidences of organic brain disease which if seen in the course of a psychosis are symptoms of a grave character.

A condition of partial or complete mutism with a tendency to move the lower jaw as in chewing food when nothing is in the mouth, is in middle or advanced life evidence of senile degeneration.

Sexual excitement in senile cases, evidencing a rise of the instinctive or feeling element is to be viewed with alarm.

The occurrence of an idiopathic hæmatoma in the course of a psychosis is a grave symptom, as patients the subject of this affection almost without exception become deteriorated.

Psychoses the result of psychic trauma, especially that of a moral nature with blighting of the affections, are more prone to be followed by deterioration.

In dealing with inflammatory or organic diseases of the brain, it should not be forgotten that nerve cells when once destroyed do not develop again. The nerve fibers in the brain, when once destroyed, are not regenerated, but a peripheral nerve fiber may be destroyed and if its trophic center is intact it will grow again.

In this connection it is interesting to recall in a general way that in some forms of deterioration occurring primarily, there is no

anatomico-pathological basis, the changes being dynamic in character, and in some instances deterioration is believed to be the result of autointoxication.

In other cases of primary deterioration, there is atrophy of certain cells from over-stimulation, the nerve cells in the normal state being inferior. In deterioration following primary forms of insanity, there is alteration in the size of the blood vessels and in their walls is found, fatty granules and pigments. The perivascular canals show enlargement. The pyramidal cells are deficient in number and lack distinctness in outline. The nuclei are changed in form and capable only of slight staining.

In paresis deterioration is the result of a chronic diffuse cortical encephalitis with increase of spider cells, thickening and hyaline degeneration of the capillary adventitial sheaths, atheroma of the larger vessels, granular and fatty degeneration of the ganglion-cellular protoplasm, sclerosis and atrophy of the nerve fibers and focal lesions.

In deterioration following alcoholic insanity there is seen atheromatous and fatty degeneration of the intima of blood vessels, increase of the spider cells, fatty degeneration of the deeper nerve cells with stunting and swelling of their processes and formation of a cell wall with subsequent shrinking.

In deterioration attending epilepsy, a fatty degeneration of the nerve cell nucleus is believed to be the pathological basis.

In deterioration at the senile period there is general atrophy and granular degeneration of the nervous elements.

Deterioration the result of organic disease of the brain is characterized pathologically by atrophy and degeneration of the nerve cells and fibers with gradual absorption of the degenerated area, which if small results in a scar, and if large ends in cyst formation.

In estimating the probability of an ensuing deteriorating process, it is of the utmost practical importance to bear in mind that, biologically considered, the brain or organ of mentality is the highest tissue in degree of specialization and supplies nothing for its own sustenance, but is dependent upon the lower organic functions for the maintenance of its inherent capacity, which in the normal state is due to the presence in the nerve cell of a stable and well nourished nucleus, nurtured by a vigorous circulation supplying the requisite nutritional elements, and guarded by the

inhibitory and restraining influence of healthy ancestral habit. In correctly estimating the potential abnormalities as modified by congenital defects, in estimating the hereditary predisposition involved both in the neurotic line and from the physical standpoint, the latter abnormalities being manifested by diathetic states, the age, habits, environment and social status of the subject, the duration of the psychosis and the developmental period upon which the psychosis has been engrafted, the deviation from the normal of existing and pre-existing physical states and impairment of organic functions, upon the harmonious activities of which depend the elaboration of those nutritional elements which go, either to neutralize the toxic cellular constituents or to restore the integrity of the exhausted nerve cell nucleus.

BIBLIOGRAPHY.

- Text-Book of Mental Diseases.—Bevan Lewis.
Clinical Psychiatry.—Defendorf.
Nervous and Mental Diseases.—Potts.
Text-Book of Insanity.—Kraft Ebing.
Manual of Mental Medicine.—Regis.
Manual of Insanity.—Spitzka.
Diseases of the Brain.—Gowers.
Journal of Mental Science.—
Practice of Medicine.—Hughes.

DISCUSSION.

DR. TOMLINSON.—This paper shows that the doctor has been an accurate and careful observer of the clinical manifestations of insanity. What interested me particularly, however, was that after carefully marshaling the physical data of development and degeneration, he then falls back upon metaphysical terms to describe the manifestations that result. In fact, he illustrates the tendency to which I called attention in my paper.

I was also much interested in what the doctor said about deterioration with relation to recovery. I believe it is understood to be a fact in pathology that there can not be a material and persistent irritation in any part of the organism, without permanent increase in its structural elements, and a corresponding diminution in functional capacity, also that this structural increase and diminution of capacity are always in proportion with the degree of irritation and its persistence. We come into the world with a limited capacity that is determined by our heredity, and this limitation is always greater in some directions than in others, so that, if the environment is such as to overstrain our capacity, the

tendency will be toward its premature and disproportionate reduction in those directions in which the limitation is the greatest. It is for this reason that recovery following an outbreak of insanity must necessarily always be relative. In the prognosis in any given case of insanity we have found, in our experience, that the somatic conditions present determine the result. If there is evidence of degenerative change in the general organism the prospect for mental recovery is bad, without regard to the nature or form of mental disturbance.

DR. KNAPP.—I desire to say that the paper was written originally for our local staff meeting at the hospital. I wish to thank the Association for the interest taken in it.

A HOSPITAL COMPOSITE.

By EVERETT FLOOD, A. M., M. D.,

Superintendent of the Massachusetts Hospital for Epileptics, Palmer, Mass.

The methods of dealing with such patients as come to a hospital for epileptics, the difficulties, the discouragements, and rewards, are matters upon which much may be written. I only hope to touch upon a few points bearing on these matters as any one of the themes would require a volume for its full discussion.

In looking over the work going on, one may at times have a feeling of exultation that amidst the towering difficulties, a measure of success has been attained. The heart swells with enthusiasm, the world seems worth living in, and the individual almost congratulates himself on being a part of such a good thing; but, alas, along comes a grumbler with the not uncommon complaint that the meal just served had been bad. A poor dinner will loom high in the horizon and a realization of the actualities returns.

It would be a cruel condition if the principal officer failed to sympathize with such fault-finding. He must very judiciously discriminate, know the character of the individual, and dispose blame or comfort as it will do the most good. If he holds himself away from the patients, they miss a certain amount of help which he alone can give.

If he holds himself too easy of access his whole time would be taken with trivialities. Many of the details can be done better by an assistant and it seems fitting that a large share of such complaints should stop at the assistants' desks and never get beyond that. There must be a careful and conscientious division of this work and well-trained aids are needed to discriminate justly as to what shall be further investigated.

If the patient may appeal to the superintendent easily, he often does this without cause and overlooks the proper authority of his visiting physician. Such attempts deserve rebuke. If, however, he can never come frankly to the first officer, he is apt to be un-

justly dealt with. With the right attitude of all the officers, the individuals very soon learn what grades of trouble will be allowed an appeal.

The excuses for being relieved from work are almost ludicrous. "Stooping makes me have spells." "All my doctors at home have told me I must not work." "I wont work like a horse." "My parents do not wish me to work." "My board is paid and I wont work." "My rapture prevents me from working."

A patient who was walking away from his building, going reluctantly to his work, heard some one's name called by a voice at a distance and willingly assumed that he was being called. He went back, walked slowly all along the front of his building scrutinizing each window. After a five minutes' search, he concluded that he had not been spoken to, and went to his place of work, looking often over his shoulder, if, by chance, he could devise another excuse for delay. He was of an obliging turn of mind and really meant to be helpful rather than to waste his time.

The capacity of such persons to work is very limited. One in twenty will prove a willing worker for a limited time. They make great claims of the advantage they have been to the hospital, even claiming that the work done is worth thousands of dollars, when as a matter of fact, to keep them occupied is an actual trouble and expense. I think those who make the largest claims are the ones whose work amounts to the least. Even willing workers are slow in movements and inaccurate. They do not do work thoroughly, they make expensive blunders, and when far advanced in the disease, they have not sufficient judgment to carry on a piece of work alone.

The moving picture of patients at work has not yet been taken. When it is it will be a revelation of slowness. Our patients have about six hours of work as a maximum and very many shorten this at both ends and by days off when some slight bad feeling is noticed, so that the average hours of labor for the ordinary case is not over twenty in a week. It takes very little to lay a patient off. If he is indisposed ever so little he prefers to wait for the doctor's visit, get in an appeal for medicine or extra diet, and spend the rest of the day sitting round, using as much tobacco, chewing and smoking, as the law allows.

There is a neurasthenic condition which is positive and an actual

inability to get up to the point of exertion which seems desirable for their own welfare. Unexpected hemorrhages occur, pains of a violent type in the head or digestive tract, neuralgic explosions, positive weakness, inability to sleep, are not uncommon and in hundreds of cases work is at times quite out of the question. None can be rightly expected or exacted.

When such a condition is admitted by the medical officer, the patient is apt to come to rely on that sort of excuse to get exemption from work and in many cases, he gradually becomes unconsciously untruthful and self-deceived. A hearty appetite is not always sufficient justification for insisting on the patient's going to work. He eats over much and is still too sick to make exertion. Rarely a patient eats too little from the idea that his system is clogged and needs clearing out. A few persons have carried on a starvation system for a few days at a time with a definite purpose of getting rid of waste before eating again. As a rule these plans have been beneficial. I have never known a patient to be really the worse for lack of food except in the cases of demented who have been neglected by care-takers. The one who drops food as a principle is the better for it.

The most unreasoning suspicions as to letters to and from home are manifested. There is a mimesis in this matter due to suggestion which causes officers much annoyance. If a patient fails to hear from home in accordance with his expectation, he immediately attaches the blame to the hospital officers. His letter has unquestionably been tampered with. Many times the family at home writes the weakest and most injudicious letters to the patient and causes no end of trouble thereby. The uneasiness and homesickness of a patient could ordinarily be prevented by judicious counsel on the part of his home people. As a matter of congratulation we find a large number of families who do understand the true conditions and do write sensibly to their afflicted member at the hospital. Very often fathers advise their sons to work and make themselves useful, as by so doing they help the parent in the matter of support. This is an incentive and nearly always such patients are useful, cheerful, not so much inclined to grumble and are besides much better as to their own health than those who have not this sensible advice from home. There is always a large number, however, who are as weak as their patient, and who have

no sense about the kind of matter they should write. If a member of the family is sick or in trouble, they enlarge upon it and rouse the sympathy of the patient until he is quite unhappy or even runs away in order that he may look once more upon this member while alive. He runs the risk of being killed under the cars, getting a ride on a freight train or of falling into the water or of having a fit while alone on the road and suffering all sorts of dangers only to find when he reaches home worn-out, hungry, much injured for further gain in health, that the supposed sick member is about as well as usual. This has happened many times.

The grounds for complaint are often trivial. A young man claimed that the woman nurse did not call him mister but addressed him by his surname. He thought this nurse could not look him full in the face and that she was a sneak. He wishes she might be discharged. He carried these two ideas to such an extreme that he became a perfect nuisance. His complaints were disregarded, as they deserved to be. He kept writing home about the matters and finally insisted on going home. Apparently these were the only complaints. They were so magnified by him that he could not reconcile himself to anything about the place. If questioned, he was found to be critical of everything; but these two grievances were the ones he voluntarily put forward. He refused all invitations to get occupied, ranged the hills in search of squirrels, or lay about under the trees. He associated another man with him and they became so much alike that it was impossible to keep either of them here as voluntary cases. They were finally persuaded to go away for their own good as well as for the equilibrium of the administration. They would not be received again except as insane commitments.

The frequency of trivial complaints is very trying so that a nurse is apt to become careless of complaints and to disregard those that are really important. The same effect is produced upon the officers though of course to a less degree. We all try to listen patiently to all complaints and to adjust them with judgment. Some complaints deserve only rebuke and some are benefited by the deserved reprimand. Many patients, however, have to be listened to while they tell a prolix tale of trivial troubles and after a word of sympathy and comfort, the officer may go on feeling that he has applied the only medicine needed. To give

an example of the complaints would be interesting. Hardly one of them is well grounded and many are childish to a degree of weakness. In going through the work places almost every patient will want to speak with the officer and they come up and interrupt each other without any apparent consideration for individual rights.

A very common expression among employees is that such a case needs to be dealt with like a refractory child or that if that man had been suitably whipped when a boy he would be better now. This is one of the points that has to be most urgently insisted on that the nurse may be fully convinced that such discipline is out of our province and that it would be harmful under any conditions. Such patients are not susceptible to the same reforming influence that normal children are. A whipping is always out of place.

Four girls come walking into the office. I meet them with the hope that they are bringing to me some very pleasant situation; but can hardly suggest with enough power to head off their complaint. They have been reprimanded by their nurse for some frivolity on the ward, they have talked too much or too loudly, one of them has been ordered to her room and has failed to obey. The disobedient one is at once reprimanded and sent to apologize to her nurse. They complain of the severity of the nurse and say she is not friendly and agreeable with them. She is too strict, austere. I ask them if they are not faithfully nursed when sick and they say, "Yes, that is one thing she does beautifully" and when sick the patient feels that the nurse is friendly and interested in their cases. They admit other advantages and have really very unsubstantial charges to make. With encouragement such as a member of their family would be likely to give, they would have voiced a tale of woe. I am finally able to dismiss them with their promise that they will try to make it more agreeable to the nurse and a victory of a moment is won. When a patient approaches, the rule is that a complaint is coming. A surprise does occur on rare occasions.

The habit of dodging when approached is one that is often seen among the feeble-minded epileptic. It is embarrassing to have a boy thus conduct himself when we approach. It is apt to

give a suggestion to the visitor that the boy has been unjustly dealt with. In one such instance I have known the case for fifteen years. The young man was not over six at my first introduction and his habit was then as pronounced as it is now. I do not think he was harshly used at home where he certainly acquired the peculiarity.

Opinions with these people do change and we sometimes find that a patient is on the opposite side of a question from what he formerly took.

When a man has been critical and fault-finding it is rare that he becomes contented and loyal. All efforts to this end are misinterpreted and often woefully distorted. In making an attempt to placate an offended patient great risk is run of being wholly misunderstood. He will very likely write a letter or tell an opinion to a companion which reveals that he still retains his old point of view and has not forgiven or forgotten. If one could with some superhuman ability approach one of these difficulties, it would seem that he might effect something; but with the ordinary mundane faculties but little impression will be made upon so obdurate a heart.

A man who at times complains of his food and is inclined to think he knows how all things should be rather better than anybody else writes a complaint to this or that former acquaintance. These letters have sometimes been referred by the recipient to the State Board or even to the Governor. It is probably a fact that the intention of the man is merely to arouse the sympathy of his correspondent and to beg financial help. This scheme usually works and results in a remittance. Occasionally the person written to thinks the complaint should be looked into by higher authority and the writer thus fails of his expected result.

A woman complained that she could never get eggs cooked properly. Some mornings they were too soft, sometimes too hard.

One man states his determination not to work on the farm, another declares he will never work in the laundry. Several similar ultimata are put forward.

A patient says another man is not adequately punished, he was himself the offender and struck a fellow patient; but he desires

the fellow man to be publicly censured and placed in a closed ward. He thinks the whole matter unjustly settled.

A man lost track of a garment. It did not return from the laundry promptly. He finds fault.

He was stretched out on a settee occupying the whole of it. Another man attempted to sit on the settee and encroached upon his space. He thinks the other man should be disciplined for sitting on his feet.

A patient was not served butter at the table. He asked for it, and while it was being brought he began to talk loudly, made all sorts of unfavorable criticism, and finally he was told to leave the table, as he had worked himself into an excited state. He came to the office with his grievance. He was an ex-sailor and I asked him how he would proceed on ship board if the butter failed to appear at his place. He laughed, said he would have to stand it, and failing of any sympathy, he went back to his building and made no further complaint.

A lack of sense of fitness of things is sometimes shown. A patient's sudden desire to defecate was relieved by getting down in front of the women's building without any idea of wrong. One often comes into the office building and makes use of the water closet without any notion that he is out of place.

The patients who go away are often ready to give the hospital a bad name. The percentage of these who are differently inclined is still large enough to keep us in some courage. With the insane I suppose they have grateful recollections of the place where they recovered. If they have not recovered their opinions would hardly be worth much. It is different with us. If the patient is a complainer before he leaves home, the habit is only slightly diminished by the teaching we are able to give.

Persons of a litigious frame of mind, especially those who have the addition of epilepsy to this disease have an exact and minute memory for details insisted upon to the end. They remember the facts that best sustain their contention.

While the patient is here it seems to me the commonest attitude is one of sensitiveness, a readiness to believe one-sided yarns and an unreasoning attitude toward the institution. The inability of the patient to see the true bearing of an argument is beyond belief especially if he is affected as to food allowance.

Many are perfectly well meaning but forget what is told them. It may be established and accepted that they are not to go to town without a nurse, but they actually forget. They forget where their own ward is and get lost if one of these mental conditions comes on while they are walking. The rule with us is that no irresponsible patient shall go out unattended. With patients who are able to go out alone they are expected to go in pairs so as to be a protection to each other. This is a rule which it is very difficult to always enforce. Such persons being allowed limited parole start off for walks. As a matter of fact no accident has ever happened because of this rule being forgotten or disregarded. The rule, however, is necessary and we strive eternally to enforce it.

In the case of women it is fully enforced, but at the expense of much liberty and freedom of action. This is not a hardship, as women do not desire the long walks and wandering that many male patients will have.

In the ultimate result no great change is ever seen in the make-up of a patient. The originally gentle remain gentle, the capacious continue so. A few are inclined to liberality of mind, but even they are easily influenced by a chance expression of opinion. We have to know each person and to deal with him as if he were the only one.

Real forgetfulness prevails. The most important events in late years are absolutely blotted out of memory. We must be the ones to remember our own advantages, the terrible disadvantages of the patient, and carry the burden for them.

It frequently happens that a patient writes the most atrocious lies home for the purpose of arousing sympathy or for mere mischief. A girl thus wrote to her mother that she had cut her tongue out and described how sore her mouth was, she was unable to eat, etc. She went into other details of a similar nature, claiming that a man who called himself a doctor stripped her naked, etc. She later acknowledged that she only meant to amuse her mother or possibly to make her a little surprised. She was asked about these letters by the doctor as soon as they were reported by the parents and claimed that she had never written any such things. On the way back to the wards she exulted over the

supposition that she had fooled the doctor and had not admitted the writing. The nurse admonished her against such conduct and she said it was only a little fun.

The disposition to resent being called a certain name which they say implicates their mother is one unbearable condition. I have rarely found a patient who would endure such an insult without feeling that he is bound to fight. We try to reason with such cases and to instruct them how to act, but usually no reason can be exercised. There is an emotional state which from early instruction seems to be beyond the reach of the most convincing argument. This idea prevails to a large extent among the grade of persons from whom many of our patients come and the diseased ones only share with the well a common delusion. It is strange, too, that the very persons who object so much to having this particular epithet applied to them are the ones who are most ready to fling it at another. The fights are usually between two such individuals.

The stubbornness of us all is well represented by this saying of a patient, "I have a feeling in me that when I want anything I want it," only we have still inhibiting power to control our conduct; whereas the patient yields to the impulse that we suppress.

"You cannot expect me to stand it when he calls me names and especially one particular name," is often the exclamation.

It is not easy to overcome the prejudices of all the early years and convince that man that it is braver to endure than to retaliate. It is a new gospel to him which he is unwilling to acknowledge. It seems to him like cowardice; or, to be exact, he fears that the onlooker will call him a coward. The actual conviction of the patient, as of the usual street corner man, is made by what he thinks will be the opinion or the criticism of the bystanders. As for thinking and feeling firm convictions of his own, it cannot be expected until he has had the accustomed coaching. It is strange how persistently these implanted opinions will be defended and how promptly an opposite position may be taken when a mere suggestion has been shrewdly dropped by some of those who stand and wait.

The dictatorial patient, the disagreeable patient, and the positively mean patient are types often met. They usually maintain

their traits and characteristics pretty permanently. I seldom find that one changes to anything else than what he starts in to be. It has been said that a knock-down argument is the only convincing one, and I have found in a very few instances that meeting with a strong rebuff has been of positive advantage. The case has learned his place and is more decent. This, of course, is a kind of instruction that can never be countenanced in an institution and when administered outside of a hospital, we have little opportunity to learn of it.

The dictatorial patient is not always the hardest to handle. He will often be persuaded of a better way in some particular matter and come to the point of view of the nurse or other officer when handled with tact.

The threat of the dictatorial person who desires it understood that this is a state institution maintained by tax payers and that if his complaint is not instantly heeded he will fly to some higher authority is not unusual.

The claim of the patient who thinks he ought to be made comfortable because of his superiority to the others here is also a feature of the work. This would involve exemption from work, extra grades of tobacco, special diet, etc., and becomes a continuous demand even in terminal cases.

Hysterical elements work in many cases. They are trying to deal with but many such cases are so altered by discipline and routine that they seem quite other persons before they go away. The stress of dealing with them while here is well repaid by the occasional success.

The existence of hallucinations is very common. Some patients suffer continuously and recognize the nature of the sensations. Some at times do not thus appreciate the truth and are, of course, temporarily insane. They act upon the impressions received and are apt to be violent and dangerous.

There are many instances of emotional violence. In one case the man had exhibited such a tendency in his home that his mother feared him and he was sent to us. He did very well under the new kind of environment for a few months, then began to show his old traits. He was asked to change his seat at the table or to allow some one to play cards at the table with him, or some other equally reasonable request. He would apparently be

quite willing to comply, but as he was about to do so and attention not directed to him, he would let fly a pitcher full of water, a chair, or any other thing at hand. If reasoned with he would always be sorry, recognize that his passionate behavior was wrong, and promise very faithfully not to allow it again. The moment, however, he met with some other slight opposition he would repeat his offence; then, after a rebuke, renew his fragile promises. It is extremely dangerous and difficult to keep such a patient at work. He is almost certain to do some serious harm in the course of time and he thus becomes less and less of a worker and finally lapses into idleness.

The disappointment caused by being denied food or by not receiving what is desired often causes an explosion of passion that is similar to that in a dog when deprived of his bone.

A patient who came from a good home, was well educated, had conducted himself like a gentleman a large part of his life and knew what propriety demanded was displeased because he did not find the dropped egg, he had ordered, ready for him. He left the breakfast table and came a distance of nearly a quarter of a mile to the office, advanced to the middle of the room, struck a tragic attitude, and demanded the reason for such a state of affairs. He was listened to patiently while he harangued for at least ten minutes. He charged all the kinds of mismanagement that are possible, said loudly, "You are a liar! You are a liar!" and this when not a word had been answered to him. The patience exhibited he will never appreciate. His assault was sufficient cause for his apprehension as an insane man. This man was placed on a closed ward and deprived of the cottage privileges for nearly three months before he was willing to assume a more reasonable attitude. His apology even then was one that was understood rather than expressed he was so loath to acknowledge any error. He probably came as near owning himself in error as he ever did or as he is capable of doing. There is often this ingrained inability to perceive any deflections from reasonable conduct in themselves. All undesired things come from the misconduct of some one else.

A troublesome patient has been reported as trying to cut another with a knife. Steps are taken to get the knife and the patient is talked with. He denies bad intention.

The suggestion of homicide is present. Violence is in the air. Imagination peoples the room with slaughtered forms. The responsibility for the care of such persons seems greater than can be borne. Sleep departs. A round among the wards where nearly everything is found in perfect and satisfying order allays the trouble to a degree and a calm night stills the fears.

When these boys have kept well for some months, they demand to go away, saying that if they are able to work here they are able to work for themselves, that we want to keep them here merely for the work they can do, etc. After their various arguments and promises have been heard for a sufficient length of time, the temptation is great to allow them to try. Many such cases have no homes able and willing to take them in, and they go off looking for work. They are difficult to deal with in any place. Their employer finds they dally in bed late in the morning, that they are careless about work, and are discharged either for these causes or for the reason that they have a fit. Then the man becomes a tramp until he can find another place. This in turn is sacrificed and so the story goes on until the epileptic person commits some stubborn and unreasonable act. He is generally choked into submission by an arresting officer, lodged in the lock-up and perhaps sentenced in the absence of a fine to a month or more in jail. He is then a criminal.

Two boys whose health had thus improved became uneasy here. They wished to be earning wages and to be independent of rules. Their planning to thus go away extended over a period of more than a year. After all efforts had been used to prevail upon them to remain quietly as they were, they finally went to an employment office in Springfield and were immediately promised positions. They went first into a place together and then separated and were in eight or ten different situations during as many weeks. The exact cause of these frequent changes was not known; but it is reasonable to suppose that the employer soon found them inefficient, unwilling to obey orders exactly, and exacting in their demands. They probably exhibited the same characteristics there that they did while in the hospital. For these faults while here, they were admonished; for the same faults while working for wages they would be promptly discharged.

These boys one day met another ex-patient who lived in Holy-

oke and the three took a car ride together. They had a dispute with the conductor as to the payment of fares and were arrested on the arrival of the car in Palmer. Why they were coming to Palmer was not learned. At this time the two boys were about to take up work in a new place. The third man was living at home and intended to go back there. Two of them resisted the officer and were rather roughly used. One was handcuffed and all were lodged in the lock-up for the night. The criminal record had begun.

I seem to be demonstrating the difficulties and giving no promise to the cheerful view.

After such a picture how can we reconcile ourselves to live with this class of defectives! Let us see if we are not doomed to adapt ourselves in everyday life to persons who have much the same weaknesses. Can there be a condition of life more trying than to have to deal with a man who patronizes you, who assumes that you are in the wrong, who acts as if he believed you a weakling, who listens to every proposition you attempt to advance as if it were already condemned, who is in short forgetful of his own high standard of altruistic principles? Is it not necessary for you to keep yourself well in hand and to remember to be a gentleman whatever he may do or say? This is not more or less than the experience we deal with among our patients. They are like this before they become epileptic, or their parents are like this, and after the development of epilepsy they are not much worse to deal with.

It would soon kill the toughest subject to be associated with people of this kind unless he can philosophically study the matters and not take them too seriously.

It should be noted that conditions with employees are only a degree different. Many of the patients are better fitted for employees than some who are hired; but the defects in hired people are soon discovered and rewarded according to their kind.

In the case of a patient all the disciplining we are able to do is to move him from the ward or cottage to another where the privileges are less. We never allow a patient to be deprived of food or to be secluded for punishment. These limitations of authority are well understood and besides these methods, as a rule, work better than any severe type of discipline. A patient who was in a cottage with full freedom of the grounds refused to work

and then kept at a distance from the nurses so that it was difficult to capture him for about twenty-four hours. He would warily watch the person who was trying to secure him and withdraw as fast as he was approached. If several persons made a move for him, he would run to a far away place and hide so that it was a problem how we could get him. He knew that he would be taken to a closed ward and not allowed the same out-door advantages; but his claim that his parents did not wish him to work was unfounded, as they were very desirous of his getting more industrious habits. He kept aloof for one night, missed three meals, and then capitulated. After a short sojourn in the wards he promised to work and for a good many months, or until his disease was so severe that he was bedridden, he worked comfortably a few hours each day and fully enjoyed life. He said he was happier than ever before and was glad we insisted on his doing something.

The appreciation shown by patients should certainly be dwelt upon, as this is not a missing element. In my opinion about as many epileptic patients show appreciation as is done by the average citizen. The friends and family of patients are easily classified in this respect along with the patients. In case of a death we invariably have the body nicely arranged and great pains is taken to provide all that an exacting person could require. Besides these efforts flowers are always placed in the coffin. This has come to be a rule so far unbroken. In much more than half the cases, the family write a nice appreciative letter thanking us for the attention shown. This one act seems to call forth the gratitude of nearly all persons in all grades of life. Whether this may argue that we could attain to appreciation in all other matters by reaching the requirements is a question I will not attempt to settle. I may offer the evidence, however, that the family are at these times relieved of an immense burden. Often a case has been hopeless for years and the family has borne great anxiety in regard to it. The death relieves this tension and they are ready to appreciate what is done much more normally than they can when the patient is alive and pouring complaints into their ears of things concerning the exactness of which they cannot judge. Often we have to deal with a patient who is trying to the last degree. If we have the help of the family, if they have had the same or worse experiences with him at home, we are enabled to bear this unreasonable state in the patient with some fortitude; but often we fail of this

moral aid from the family because they listen to the complaints, half believe them, and stand in an attitude of suspicion towards the institution. The actual number of such instances is not great, but it does not take but a few to loom very high in the horizon of the management.

As to the attitude of patients who feel that a good home is furnished them, a word ought to be said. Without such persons it would be intolerable to live with the others. They sweeten the whole life of the establishment. They place the matter correctly before the grumblers and often persuade some disaffected one to see the situation in a correct light. They are loyal to the administration. They work with what industry their health allows. They spread an air of cheerfulness wherever they go, praise the food, brag of the doctors, applaud the whole situation, and are a light to the community. When such a patient leaves us we all feel as much interest in him as we could in any other personal friend, follow him in his career while away from the hospital, and welcome his return when this becomes to his mind, or to that of his friends, advisable.

Life is worth living so long as even one such patient can be cared for.

It is not uncommon even in the suburbs of a large city to find that some person has girdled a fine tree. We attribute this to vandalism and wonder what manner of man it can be to thus destroy property so wantonly. This kind of an offence and some others, such as placing obstructions in the road, or marking on walls a la college student, etc., are not unheard of in our vicinity. When these acts are done many people consider it a natural tendency to lay them to our population. At a good deal of pains I have looked into a large number of such occurrences and have found that more than half of them have been the depredation of the supposedly normal man who inhabits near us. I think, too, this is understood by the community at large, as we only suffer moderately from suspicion and that mainly from people whose opinions are not the weightiest.

The runaway patient cannot be cut off from another opportunity to escape. He must be treated with liberality. He promises well. Of course, irresponsible persons must be securely shut in and very little risk may properly be run with women. They are closely watched and attended. They are more accustomed to

house life. They do not require or expect the liberty of wandering about the estate.

The men must be treated with great liberality, their errors overlooked and their real intention seen rather than their occasional lapses into disobedience. It would make a prison of the hospital to allow slight errors to count for too much. The excess of freedom is to be desired rather than the defect. Home-like surroundings ought to be provided as far as the patient is capable of appreciating them. Even when he lapses, the same conditions should be altered for him as brief a time as is reasonable. Punishment and severity do no good.

The suicidal element is not a common one. Even when it is exhibited I have found that it is introduced in a hysterical frenzy for the effect it will have on the officials. Rarely an actual melancholy leads to a real attempt at suicide.

As a means of arousing the antagonism of the nurse or fellow patient, no method has yet been found which so speedily accomplished this end as that which is practised by certain ones of the feeble-minded epileptics, or of the more demented class. As an example I cite this quotation:

"Mr. R., I'm big enough to go home. Mr. R., I'm big enough to go home. Mr. R., I'm big enough to go home. All my family want me to go home. They do, Mr. R. I'm big enough to go home. All my family want me to go home. They do. They like to have me. They do. They shake hands to me. Mr. R., they shake hands to me, they do. Mr. R., I'm big enough to go home. All my family want me to go home, they do." This sort of formula repeated about a hundred times will arouse such emotions in the hearer that no life is safe.

The story thus sparsely interpreted might be much enlarged. The field for such observations is very large. I have only tried to give some types of the daily happenings among such people as these.

Even in this attempt much must be left to the imagination of the reader. If he is familiar with such persons he will recognize many situations which are barely hinted at in the foregoing account. He will be able to appreciate the struggle to attain what is desirable in dealing with the afflicted of this class. He can see the daily and hourly burden and as well appreciate the compensations and the humor of many situations.

SOME PROBLEMS IN PSYCHIATRY AND PENOLOGY.

By C. A. DREW, M. D.,

Medical Director State Asylum for Insane Criminals, Bridgewater, Mass.

On June 22, 1905, M. F., an intelligent looking mulatto, 26 years old, was admitted to the Massachusetts State Asylum for Insane Criminals from the State Prison at Charlestown, where he was serving a sentence of from 18 to 25 years for assault with intent to rape.

The medical certificate upon which the commitment was based was signed by two experts appointed by the State Board of Insanity to examine as to the mental condition of prisoners suspected of being insane, also by the prison physician who wrote an independent certificate which did not differ essentially from that of his expert associates. The certificate reads as follows:

To His Excellency, William L. Douglas, Governor of the Commonwealth.

We have made two examinations of M. F., an habitual criminal committed (for the third time) to the State Prison May 31, 1904, on a sentence of 18 to 25 years for assault with intent to rape. He is 26 years of age and married. In our opinion his condition is such as to require his confinement in an insane asylum for observation and care, although the symptoms of actual insanity are obscure, and feigning possible.

For the last twelve days he has refused all food furnished from the prison kitchen and gives as his reason that another prisoner puts powdered glass into it. He takes in consequence nothing but water, with the result that he has emaciated considerably. This glass "cuts his throat and stomach." He has made an attempt to hang himself with his suspenders and to bleed to death by opening a vein in his hand and the bend of an elbow. He insists that his child is brought to him at night, and that a detective comes and threatens him also at night. He also says that he sees wheels spinning about his room. The man who (he thinks) poisons his food also visits him at night. People in the kitchen are "trying to do him up." His wife says that his uncle is in an insane asylum.

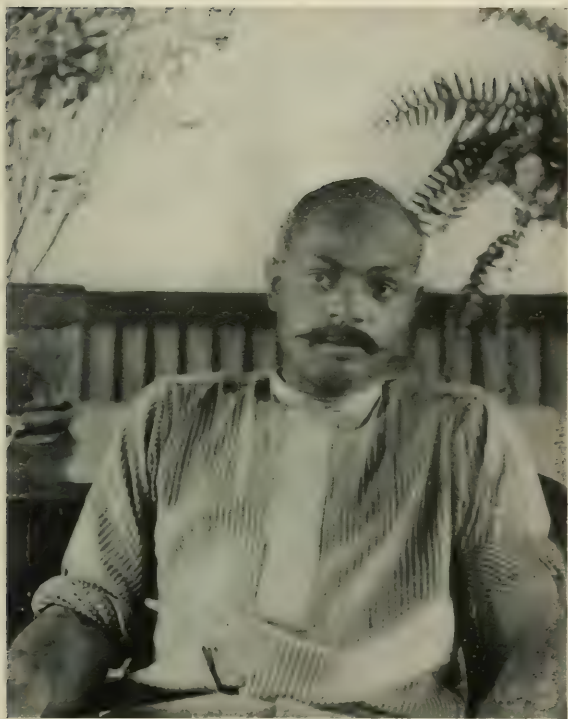
On the other hand certain circumstances seem to show that his attempts at suicide are not genuine ones. He has told us and written his wife that as there is no longer any chance for him to secure a new trial he is determined to take his life, indicating a sane reason for such attempts.

In view, therefore, of the possibility of danger from the prisoner's suicide and his persistent refusal of food we believe it to be essential that he should be confined in the asylum for criminal insane at Bridgewater, where the facilities for thorough observation are complete and where forced administration of food can be employed, if necessary.

This medical certificate seemed to us to be written with much care, after careful consideration of all the evidence, and with a full appreciation of the possibility of the prisoner being a clever malingerer. Indeed, we are inclined to think that this medical certificate was so well considered as to reflect credit, even on the eminent physicians whose signatures it bears. If the final judgment be that the prisoner was not insane, the light thrown on some phases of related problems in psychiatry and penology will not be at all lessened.

We note that this was the prisoner's third commitment to the Massachusetts State Prison. From his mother we learned that an uncle had been an inmate of a hospital for insane in Massachusetts, and from the patient's own story, supported by some known data, we learn that our hero was born in Nova Scotia; that his sailor father, who was a hard drinker, died of tuberculosis at the age of forty-four. According to patient's story, his father had killed his man in Texas, but escaped to his ship and avoided arrest. His paternal grandfather was insane and confined in an asylum in Nova Scotia. One J. H., a demented epileptic, and an inmate of the Massachusetts Asylum for Insane Criminals, is alleged to be a first cousin of M. F.

Patient came to the United States from Nova Scotia at the age of seven, and attended school for the following three years. Was sent to the State Primary School at Monson when he was ten years old, thus early becoming a beneficiary of the Commonwealth of Massachusetts. After two years at Monson he was put on a farm in Springfield where he staid one year and then returned to Lynn, which has been his home much of the time since,—when not serving time. It may be due to the environments of this prosperous city of the commonwealth quite as much as to the refining influences of those public institutions where M. F. served time so long that he seems to have taken polish readily. There was very little of the rustic about him. His manners and English were good, with little to suggest a street waif or a common tough.



M. F.

The prison physician testified that "M. F. had learned 'short hand' in prison and wrote English in a superior manner for one of his race." Patient belonged to two races and seemed to have mastered some of the accomplishments and vices of each.

It seems that M. F. narrowly missed being a blacksmith, as he worked at that trade for nearly five years. As near as patient could remember, he had been arrested about ten or twelve times. Several of his arrests were for assault, but horse stealing, breaking and entering and attempt to rape, were among the counts.

On examination, patient was neither excited nor depressed. Talked in a quiet and agreeable manner. Said he was locked up frequently at prison but most always for fighting. Said one of the prisoners in the kitchen put poison in his food to make him drowsy so that he would tell who wrote a certain letter of complaint to the governor. At first it was ground glass, later it was some other form of poison. It was the warden's order that his food be poisoned. Said he tried to hang himself because he did not believe he could live under such conditions. He saw his child run around his room at night and thought his wife visited him and the officers sent the child up to his room to see him.

A month after admission it is recorded: "Patient complains that 'the warden of the State Prison is down here and comes to my room every evening to try to get me worked up, but I don't notice him.' He reports to doctors and night attendants that the warden knocks on his door at night and keeps him awake, but still patient gets his usual amount of sleep and his belief does not interfere with the routine of his daily life, such as card playing, playing violin, ball games, etc."

Two months after admission it is recorded: "Patient was transferred from E-2 to F. Has been a disturbing element on the different wards where he has been. Has threatened to make trouble several times and tries to gather about him a following of the more vicious and weak-minded."

A week later he promised to use his influence for good if permitted to go into the large recreation court again and continued perfectly well behaved for two weeks when he made a rather sensational escape with the aid of another patient, F. W., by climbing up the face of the building on to the roof, allowing himself

to be used as a ladder by his associate from the third window to the roof of the hospital building, from which F. W. pulled our hero up after him. They assaulted an officer who was on the roof with a helper from the prison department, passed to another building outside the walled enclosure, went down the outer face of that four-story building by way of the windows, and off into some woods with several officers in close pursuit. It was already dark in the woods, so that it was not difficult for men so clever to elude pursuers for the time being. As it proved, the patients became separated in the darkness and the white man has not been heard from since.

The story of that man-hunt would do for a chapter in a New York Ledger serial. There was a meeting with a village sheriff late on the following night, an exchange of confidences—the sheriff feigning the part of a rural crook—in which M. F. told of his long sentence, how he had played insane in the hope of escaping, and of his determination not to be taken alive. The fictitious crook volunteered to get some food, of which the other stood in sore need. When M. F. lay down his big stick to take the food, the sheriff drew his gun and ordered “hands up.” The hands went up but the head went down to find the sheriff’s solar plexus. When the sheriff recovered from the shock, his prospective prisoner had vanished. Later still that night there was a horse missing—“a hurry of hoofs in the village street, a shape in the moonlight, a bulk in the dark,” and a riderless horse cropping the grass on his way leisurely to find his stable early the next morning. This closed the second act.

If M. F. had had leisure to read the morning papers, he might well have been proud or frightened had he recognized himself. The graceful, rather light-skinned mulatto, weighing 180 pounds and standing five feet ten inches, had grown to be a giant negro, with almost superhuman strength and monstrous appetite for lust and blood. When the shades of night came on again, fair cheeks grew pale and strong men hastened to get home before dark. The telephone lines were kept busy. M. F. was located north, east, south, and west almost in the same hour. Many men and some boys were hot on the trail of M. F., who usually managed to reach the woods just as the pursuer was about to seize him.

The next scene was laid in the village of Acushnet, a few miles

from New Bedford. A dead-tired mulatto lay sleeping under an apple tree surrounded by four farmers armed with pitchforks. These farmers had read the papers and had noted that a reward of \$100 was offered for the apprehension of a desperate mulatto who had escaped from an asylum for insane criminals. This sleeping man "favored" the pictures in the city papers. After a consultation, they decided to wake the sleeper. It was not so easily done, but after some prodding he opened his eyes, yawned, stretched, sat up, blinked in a stupid way, lay back, curled up, and apparently went to sleep again. More prodding brought him to a sitting position again and loosed his tongue. "Let me alone," he said, "the woman told me to come out here and sleep it off." But the suspicious farmers would not desist. The thick articulation and manner were those of a drunken man, but the features were clearly like those of the much wanted M. F. Finally they got it out of him that he had been working for Mr. Blank of New Bedford, had been off on a drinking bout, had called at a house in sight for some breakfast, and the woman had advised him to go out in the field and sleep off his booze. His story fitted so well his appearance that it was finally accepted at its face value. No sooner had each farmer gone about his work than the apparent drunk became possessed of all his wits. When alone again he recovered so quickly that one might have supposed the farmers had given him a Keely or Oppenheimer treatment. Without an invitation he entered the house of a newly married couple, who were absent for the day, and appropriated the young husband's wedding suit. When next seen M. F. was walking towards New Bedford rather elegantly dressed, in patent leather shoes and other garments to match, carrying a light overcoat over his arm. The young husband found a roll of clothing under his bed that night, on which were stamped with indelible ink "Asylum State Farm."

The next chapter opens after a period of three months and the scene is laid "way down in Maine." The government post office at Red Beach had been entered and a watchman shot. Two men had crossed the St. Johns river in a boat which they abandoned on the New Brunswick side. The police of St. John were notified and had John Ashton, a light mulatto, and William Phelps, a white man, in custody when the Maine officers reached

the Canadian city. John Ashton proved to be our much wanted M. F. He was willing to return to the United States and was promptly tried in the United States District Court and sentenced for 16 years in the Maine State Prison. We understand that no plea of insanity was made at the trial, and, if we may trust the newspaper reports, the court informed the defending attorney that his plea for clemency on the ground of mental derangement would receive no consideration. So it came to pass that M. F. brought up safely in a penal institution in a sister State.

The newspapers said that M. F. made a frantic dash for liberty, attacked the warden, claimed his food was poisoned, and persisted in acting queer after being sent to the Maine State Prison, till the warden took him across his knee and applied a piece of rubber hose, when M. F. cried "Enough, I won't be insane any more; it's no use to try to fool you." We have reliable information that the newspapers exaggerated, as M. F. had not attacked the warden up to May 1 last, but he did "commence to play insane soon after his arrival and was 'cured' of that very quickly, since which time he has given no trouble in any way." This information was dated April 30, 1906. We are assured that the Maine prison officials consider M. F. perfectly sane. We omit the moral and refrain from discussing the "insanity of degenerates." It is doubtless true that M. F. has a bad heredity. That he may some day be truly insane is very likely. That he was malingering at State Prison, as the committing physicians suspected, and after his admission to the Massachusetts Asylum for Insane Criminals is almost certain.

Prior to four years ago malingering of this sort, so far as we know, was not an important penal problem in Massachusetts. Of late it seems as if the gild of crooks had endowed a chair of psychiatry in the school of crime. At least it is a fact that more malingerers have been admitted to the State Asylum for Insane Criminals during the last two years than for eight years prior to 1904.

Medical men have grown more and more to accept the view that incorrigibility means mental defect, and clever criminals have been quick to note that vicious conduct leads from prison to an asylum, where there is greater liberty and better opportunities to escape. So it is that progress in one direction has

created new difficulties which we are bound to face. Every clever malingerer sent to an asylum for the insane becomes an expert in feigning. He quickly qualifies as a teacher that his profession may keep abreast of the times.

The genuine incorrigible is usually defective mentally and this complicates the situation. The instinctive criminal may be perfectly able to adjust himself to his environments and may not violate prison rules unless he wishes to be thought insane. The bad influence of the incorrigible imbecile on prison discipline is so well known as to need only mention in passing.

The desperate criminal, possessed of all his cunning and accomplished in the arts of his craft, has an almost unlimited opportunity for mischief in a hospital for the insane and very many opportunities for escape, unless the aim of the hospital as a curative agent be surrendered for prison regulations.

Not a few clever criminals in Massachusetts could give points to medical men concerning symptoms of insanity, and those who plan hospitals for the criminal insane in future should understand with what they must reckon. This we believe is one of the problems created by medical and humanitarian progress.

To the physician interested in penology and psychiatry two great interests overshadow other interests. To prevent disease in penal institutions and provide adequate hospital accommodations for the physically and mentally ill when untoward conditions make preventive medicine unavailing.

Tuberculosis and insanity are so closely related, and so easily foremost among the foes we must fight that it seems fortunate that in throwing our forces against the one we do much to discourage and prevent the development of the other.

We have reason to think that the conditions of penal institutions in Massachusetts are comparatively favorable. The death rate from tuberculosis is very low at the State Prison and State Reformatory and in some of the county institutions where men serve long sentences.

A great many insane men are arrested and sent to the prison department of the State Farm as vagrants, seemingly because it is less trouble and less expense than to test their mental integrity by due process of law.

We had a hope last summer of a new State prison for Massa-

chusetts on an island not too far from the main land and a trunk railroad line to be fairly accessible and of sufficient area for elbow room and out-door employment for a large percentage of the inmates. We understand the water supply was tested and found good and sufficient. We dreamed of a prison so constructed that every sleeping room would be flooded by sunlight and freshened daily by an abundance of the purest air. Because of nature's provision against escapes we hoped the narrow windows could be broadened and the heavy gratings of the conventional prison made much less conspicuous. We believed that every work shop and school room could be as light and airy as the best of similar structures for children and laborers of the non-criminal class. We had heard something of the ideals of the prison commissioners and had reason to believe that Massachusetts would have a State prison unique in some respects but especially designed in its construction and location for the prevention of physical and mental disease. Why and how the plans of the prison commissioners, supported by the governor, were for a time at least defeated is another story, of which I am not sufficiently informed to write.

While there is much to be said in favor of an island site for a penal institution, I do not think this would be the best location for a hospital for the criminal insane. To meet all the needs of such an institution we must plan for as many sub-classes as we would in building for the non-criminal insane. The professional house breaker and safe breaker cleverly feigning insanity must be reckoned with. The dare-devil imbecile with a genius for crime, who knows no fear, and holds his own life almost as lightly as he does the life of another, must be carefully detained for society's sake. The demented vagrant with delusions more or less systematized, the insane epileptic, and the general paralytic possibly sentenced for crimes which they do not remember to have committed, the well-bred man mildly demented, supposed to have recovered from a psychosis in his youth, who repeatedly tries to cash forged checks and wonders why people should make so much fuss about so small a thing, are a class much in evidence. Then there is the old man of good family and honored service, whose name never bore a stain until he was past sixty, arrested for indecent abuse of female children. Men of his class should

be provided for—not according to the crime. Many of these are technical criminals only, but the courts sometimes fail to understand how the finest mental machinery may be responsible for the most immoral conduct when nerve cells degenerate and cerebral blood vessels become diseased. Again, most important from the physician's viewpoint are those acute cases—evolutionary and unpromising they often are, but manic-depressive, confusional or toxic, and hopeful they sometimes are.

The State Asylum for Insane Criminals in Massachusetts, which aims to be a hospital in fact, although it has not asked for a change of name, was not designed to hold clever malingerers. It has been an evolution from what was intended as an asylum for harmless chronic insane who might help out in the fields when the regular winter boarders at the State farm were having a summer vacation. But the ever watchful superintendents of the asylums and hospitals for the insane in Massachusetts—they were mostly asylums then—thought the rough acres of the State Farm just the place to which their most turbulent charges might advantageously migrate. It is a familiar story. Medfield Asylum had not then been created. There was not so great a contrast from those "harmless good workers" selected by the faithful assistant physicians and endorsed by the several superintendents of the hospitals for insane of Massachusetts to the inmates of the State Asylum for Insane Criminals in its earlier years.

Simplicity and economy have been watchwords of the superintendent of the State Farm from before the beginning of the State Asylum for Insane Criminals. Good ventilation and good light or day rooms and sleeping rooms have been secured with forced ventilation throughout the cold weather.

More than 70 per cent of the patients sleep in single rooms. All the buildings occupied by patients are practically fire-proof and have been built at less than \$650 per bed, including furnishings.

We believe these buildings are good enough and suitable for the great majority of our patients, and we do not feel like apologizing or boasting of what we have. A large use of the labor of prisoners and an exceptionally competent foreman of construction have been important aids in building substantially for ourselves at a very low per capita cost. It is almost certain that the asylum

buildings at the State Farm could not be duplicated in brick and stone for the same price to-day.

If we were to build again, with the advantage of our experience, we would probably not build a hospital for insane criminals directly on to a prison for misdemeanor cases, lest the graft should grow to be a troublesome burden to the parent stock and suffer in turn like an over-coddled child for lack of opportunity to work out its own salvation. It is an unquestionable advantage all round to use prison labor in building for the insane criminal class. It is surely a disadvantage to have the different classes so closely related that intercommunication is difficult to prevent. It is also a positive disadvantage to have the nerve trying duties of an attendant upon the dangerous insane daily compared with the less onerous duties of those who guard sane men serving short sentences for drunkenness or vagrancy. These and other intercurrent influences make against the morale of nurses and attendants who care for the criminal insane.

If we were facing the problem of providing for the convict and criminal insane, with no money invested in a plant, we would like to select a hundred acres of rough, high land adjacent to some railroad and abundantly supplied with water. To build economically the prison population of the State ought to be employed, and this means that the work must be done under the auspices of the prison commissioners, or of the State Board of Charity which has jurisdiction over the prison department of the State Farm. But we can build "castles in Spain" and hospitals for the criminal insane, in imagination, without an appropriation or the consent of any one.

We appreciate and sympathize with the sentiment which has torn down the walls of the airing courts which formerly offended the eye in connection with many hospitals and asylums, but in building for six hundred or more criminal insane I would advise enclosing fifty acres or more with a stone wall that could be depended on to keep the public out and the patients in, except by suitably guarded exits and entrances. These walls would be so far distant from the buildings as not to suggest the conventional airing court of the old time asylum at all. If the buildings stood on the highest elevation, the top of the walls might be below the level of the foundations of the buildings and still be effective.

If the whole surrounding wall was well lighted at night and adequately patrolled, there would be little incentive for patients—truly insane or malingerers—scheming with friends outside for saws, or making keys to lead them to liberty. In other words, our outer defences would be of the most complete prison construction to safeguard the public, while within the gates our construction should be simple and of the most approved hospital designs for the progress of science and the cure of disease.

One hospital building proper, thoroughly equipped after the manner of a complete general hospital, should be within the gates, yet some distance from the asylum buildings. It might have four open wards of fifteen beds each, with fifteen single rooms additional for selected cases. It should have its own kitchen and dining-room, as well as sun room and reading-room, and have a trained woman nurse in charge, assisted by the necessary number of men nurses. As an adjunct to this acute hospital building there should be an extensive hydrotherapeutic plant with a competent physical instructor in charge who should teach the whole attendant body the art of the masseur and the principles and practice of hydrotherapy and physical training. Not only the acute cases should here be treated, but a considerable percentage of chronic cases capable of physical improvement should be sent here daily as "out-patients" for their own good and for the good of the student body receiving instruction in this department. So thoroughly convinced are we of the value of the so-called physiological therapy that we would count money well spent in developing this line of treatment to its highest plane.

Another specially constructed building, with its own kitchen, sun room and broad porches, where patients could be moved on wheeled chairs and beds to sit or sleep in the open air, and wheeled into a warmed room for change of clothing or bedding would be needed for the tuberculous. Shacks and tents might well help out in summer for selected cases, but there is usually a reason why a man with a sentence should be provided with substantial accommodations.

For other buildings within the gates we would not ask better than duplicates of the more recently constructed asylum buildings at State Farm, except a detached building for the convalescing and the quiet men of good conduct and honorable previous

record, who are only technically criminals. This should be apart and have its own dining-room, walks, flower beds in summer, and sheltering grove.

Outside the gates, beside accommodations for the superintendent and other medical officers, we would have modest cottages built by the State and rented to married nurses and attendants at a price just covering interest on investment and cost of repairs. A comfortable nurses' home with reading room and rooms for recreation for those who have not come to their birthright would be an essential part of the plan. The scheme includes such wages for competent nurses and attendants as will enable a man to marry and live in modest comfort and be retained for years, if competent, as a professional nurse and attendant on the insane.

Such are some of the essential features of the hospital for insane criminals we have built without an appropriation from the stuff of which dreams are made.

DISCUSSION.

DR. G. H. HILL.—I was much interested in the paper. It only illustrates how complex the subject is with which we deal in State hospitals for the insane and in criminal institutions where there are morbid minds. I call to mind the case in which a young married man, a church member, who had led a very good life, but had received injuries to the head, became an invalid, and became a case of dementia præcox. He failed in business, and on the Fourth of July shot a neighbor, who plagued him, with a revolver and killed him instantly. He, I believe, feigned insanity before he committed the crime, and for months, while he was in the county jail, was feigning insanity all the time. I was a witness for the defence and claimed that he was partially demented before the crime was committed and conscientiously tried to help the jury get at the scientific facts in this particular case. But I was obliged to admit that he was feigning insanity, consequently he was convicted and sent to the penitentiary. After he had been there a month or two, he was transferred to the insane department of the other penitentiary, in Iowa, where he still is and has been over a year and is conceded, by all who have seen him, to be gradually losing his mind.

SOME OBSERVATIONS ON THE MEDICAL TREATMENT OF INSANITY.

By MAX E. WITTE, M. D.,

Superintendent of the Clarinda State Hospital, Clarinda, Iowa.

Whenever a patient is submitted to his care, a double problem is presented to the physician for his solution. The two sides of the problem may be briefly given in the questions: What is wrong? How can it be righted? Or medically speaking in diagnosis and treatment. The patient is interested primarily and fundamentally in the successful solution of the second half of the problem. He does not care as a rule as to what is the trouble as long as the trouble is removed and he is restored to health. It is for this purpose he comes to us and implores our aid, and it is for this we move and have our being professionally. It is for this our every energy should be bent. If we do less we fail in our solemn obligation to mankind and are remiss in our sacred duty to our needy brother.

It is axiomatic to say that for the correct solution of the second phase of the double problem it is essential that we solve the first. We have been, therefore, and are now, as is eminently proper, putting forth every effort to widen our field of knowledge, and to develop and train our perceptive and reasoning faculties; we levy on all the sciences, and call in exquisite instrumental aid to recognize disease and to give us an understanding of its origin, nature, extension, and duration.

The pursuit of knowledge from this side of the subject is of intense and absorbing interest, not only to the individual searcher, but also to the profession at large, so that we cheerfully work and deem no sacrifice too great for knowledge for its own sake. It would seem at times that we forget we are seeking knowledge for a means to an end, not as an end in itself. In our eager study of medicine as a science, we are in danger of neglecting medicine

as an art. This was never quite true of surgery, and is not so true as it was in internal medicine; for I am mindful of the splendid achievements of the last few decades in these fields.

It seems to me to be still particularly true in our special field—psychiatry. Am I wrong in this? On looking over the literature devoted to our specialty it is evident to the most casual observer that articles and recorded work devoted to healing and treatment proper are conspicuously in the minority. Some questions naturally arise: Is this as it should be? Do we know all there is to be known in the field of therapy and do we employ such knowledge as intelligently as it should be done? Has the last word been spoken, and need we only accept authority and follow precedent for our procedure? I think not.

The master in an art must not only have a clearly defined knowledge of what is to be done, but also of the means at hand to do it, and the skill to employ the given means to the best advantage. This would mean that the medical practitioner, even he who delves in our own special field, should not only be a profound diagnostician, but also an accomplished therapist. We all recognize the need of the first essential, but we are very prone to forget the second. And yet it seems self-evident that as much thought should be given to the remedy as to the disease. A number of influences are at work to bring about this condition. I can here refer briefly only to a few of the more important: The first is due to our early medical education and dates from our student days. Was not therapeutics held in least esteem in the circle of the medical sciences? Was not careful and minute diagnosis rigidly insisted on, but treatment indicated in rather loose and general terms? Are textbooks any more helpful in this respect? Again, partial or complete medical nihilism plays a role. This condition may properly be ascribed to atrophy from abuse or disuse. A remedy is employed improperly, and with disappointing results as a matter of course. Complacent self-esteem condemns, not only the remedy, but is perchance ready to deny the value of every and all remedies. And then, modern commercial pharmacy is another important factor. Modern pharmacy in its admirable productions, supplies ready-made to the hand of the physician, elegant, palatable preparations, with the

various ingredients carefully combined and accurately dosaged, pleasing alike to the eye and the palate, but too convenient and conducive to routine medication and a tendency to neglect meeting definite conditions with definite therapeutical means. One more, I may mention faddism. The disposition to pursue one line of treatment to the exclusion, or at least neglect, of all others. Now, if I were sick, I would be afraid of the man so boxed up mentally by self-reared barriers, as to be unable to see truth in any other direction save that in which his individual nose points. It is safe to assume that there is a nugget of truth in every method of treatment which has gained vogue, even if the treatment on the whole is fallacious—even absurd. It is our affair to find the nugget amidst the trash, and to treasure it in our armamentarium for the time of need.

To ultra conservatism may be also assigned a role. Many a good man is so conscientious as not to avail himself of a remedy or line of treatment just because he does not understand the full "modus operandi." Fortunately this is not absolutely necessary in the practice of an art based on an empirical science like medicine, which is happily becoming daily more rationalized. Thousands and tens of thousands suffering from malaria were healed by the empirical use of quinine, before the discovery of the plasmodium malariae and that the cinchona salts are fatal to it.

In a short paper of this description it is obviously not practicable to enter into a discussion at length of the various therapeutical agencies employed in the treatment of disease, and more particularly insanity. Hydrotherapy, actinotherapy, electrotherapy, massage, dietetics, all are of the utmost importance, with large and well-defined fields of usefulness, but it is more especially with treatment employing the materia medica of our fathers I wish to deal briefly in certain of its phases. Now, I am aware that in this assembly I will appear as one carrying coal to New Castle, still certain experience in my own practice, as well as what I have observed in that of my friends, may serve as an excuse. It may be well to premise a few necessary postulates in the practitioner who undertakes to intervene to break up a vicious circle called disease and restore a disordered organ, or rather a mutually interdependent set of organs, to functional or perchance organic

integrity. First he must have a profound, or at the very least a good working knowledge of a few essential remedies. To know the possibilities wrapped up in a few is better, much better, than to know inadequately and superficially many.

It is said of Paganini that he was able to call divine harmonics from the G string of his violin so that his audience was unaware that all other strings had broken. Cannot one also become a virtuoso, say in calomel?

Again, the physician must have the courage of his convictions, for without it he lacks an important factor in his personal equation which makes for success. Fabius Cunctator may have been able to save Rome by uncertainty and vacillation, but he certainly as a physician cannot save a patient whose every attention is rivetted on him to read his fate. A certain mental attitude is therefore to be cultivated—not as a mask—for we cannot deceive, but as a part of ourselves. Why is it that from one physician radiates hope and comfort and his very presence illuminates the sick room, and from another just as learned, just as well-meaning the undertaker readily takes his cue? Psychotherapy, suggestion, expectant attention, personal influence reacting on the patient's mentality you say. Granted; but let us see to it that it is with us and in the right direction.

As a result of somewhat extensive investigation by me some years ago, and more recently by Dr. Wherry, as to the blood conditions in the insane, we have found that there is a marked deterioration both as to its formed elements and important constituents. As a rule which had scarcely any exceptions the corpuscles were much below the normal. In an extensive series not one was up to the normal, 5,500,000, per cubic mm. in red corpuscles. Only a few were over 4,000,000, and most were between 3,000,000 and 4,000,000, and some even lower. And hæmoglobin was also much diminished. The percentage varied between 60 and 80, and only a few approached the normal and none reached it. This means that the oxygen carrying capacity of our great circulating medium is greatly reduced; that all vital functions, including that of the brain and nervous system generally is impeded and lowered; that repair is inefficient and retrograde metabolism incomplete with the retention of deleterious products in the system.

The blood impoverishment varied in different individuals within wide limits, and in different forms of mental disorder, and was perhaps on the whole most marked in certain forms of involution melancholia. As a rule in these very pronounced cases, mental improvement proceeded *pari passu* with that of the blood. Iron, manganese, and arsenic in some easily assimilable form are of course indicated, but frequently the problem is not so simple. We find cases wherein the restorative remedies named alone are insufficient, due probably to functional disorder of the hæmopoietic organs, or the retention in the circulation of counteracting noxious products. And alteratives and evacuants must be called into aid besides. At all events it is a distinct advantage in our treatment to give heed to the findings of the microscope and hæmoglobinometer. In many cases the blood poverty is unquestionably due to loss of appetite, indigestion or lack of suitable food and is simply a link in the general malnutrition, concomitant with or underlying the psychosis. Then besides proper food, tonics are in order. The best tonic in my hands is one having a direct energizing influence on the nervous system besides, *nux vomica* or its alkaloids.

As another link in the chain constituting the vicious circle is what may be called abdominal torpor, more especially manifested in constipation and deficient renal action. So constantly present is sluggishness of the lower enteric canal with retention of its putrescent contents, its resorption and pouring into the system of toxic products, that many forms of mental disease appear to have in this autointoxication their etiological basis. Frequently the correction of this morbid and morbidic condition by the judicious administration of evacuants is all that is necessary to regulate the circle of disordered functions, and start the patient on the road to health. The *materia medica* gives a choice assortment of remedies for our purpose and there is no trouble in finding the remedy, but rather the difficulty comes in selecting what is best adapted to the particular needs of our patient, and to administer it in the way best suited to achieve the desired end, and to restore a perverted function to its integrity and to independence from medication in the future. At first glance this would seem absurd. Anyone can give a cathartic and evacuate the bowels. Yet

experience and reflection will convince the one open to conviction that careful and intelligent treatment right here may mean much to the patient. In troubles of this sort, have you ever had a patient in an unimproved, or even worse, condition after a course of laxative treatment than before? If not, you have been more fortunate or rather uniformly wise in conduct of treatment than I have been. In many cases of mental disease characterized by a subnormal and impeded functional action of the vital organs, we find a sluggish circulation with much diminished intravascular pressure. This usually amongst other things means less blood passing through the renal circulation, and a lessened excretion of waste products and a consequent retention of these deleterious principles. I find no enduring good results from simple diuretics alone, but frequently ready help in digitalis alone or combined with strychnia. In my opinion the potentialities lying wrapped up in digitalis in improving the cerebral aside from the general circulation have not been sufficiently recognized or exploited. This is perhaps due to the difficulty in obtaining a thoroughly reliable and efficient preparation and the dread of cumulative action, which of course should be considered, but with care need not be unduly feared. More thorough and intelligent study of the drug will go far to bring out its qualities for good, and I have no doubt its more frequent and beneficent use.

Digitalis and *nux vomica* properly belong to rather a large class of remedies which produce results by primarily and directly influencing some part or parts of the nervous system. Right here I must confess to a considerable reluctance, to even briefly discuss the medicines embraced in this class, for I am fully aware that I am treading on debatable, even dangerous, ground; the medicines concerning which more discordant views are held by my colleagues than perhaps those of any other class. I have friends in the profession who will not use important members of the class under any consideration. Nevertheless, I am convinced these men are wrong and handicap themselves in not taking advantage of a very useful class of remedies. I will grant that they, like all agencies powerful for good, in careless hands are also potent for evil. But crises arise when like the proverbial revolver in Texas they are urgently needed. The simile may be extended.

In recent years I have observed a disposition in certain quarters to relegate opium to oblivion. I think this is a rank injustice to a most valuable member of our medical armamentarium. In all forms of mental pain and distress, such as melancholia with great restlessness and anxiety, I still consider it, as have the past masters in our specialty, a sovereign remedy. Nor have I been able to convince myself that other lines of treatment, such as the alterative, iodide of potassium or sodium treatment, can adequately replace it. Its qualities, however, must be thoroughly understood and employed, as the surgeon employs the scalpel and the fencer his foil—in a masterly way. In melancholia with much agitation, a sense of præcordial oppression and misery, and general uneasiness, due to the projection of organic tidings of evil into the subconscious regions of mind, I employ opium with the happiest results. I am careful, however, to first have a thorough “housecleaning,” if you will permit the expression, in my patient. If this is neglected more harm than good results. Moreover I invariably combine my opium with tonics and appropriate laxatives to fully counteract its locking effects on the secretions and excretions. I am especially careful as fully as I may, to so adapt the dosage as to achieve the effects desired, to vary it to meet existing indications in each case and to withdraw it when no longer necessary. In other words, I guard against routine practice, and endeavor to treat my patient as a distinct and separate individual who is sick, and as such has special needs, rather than a case belonging to a general class.

In the treatment of the class of patients indicated, I much prefer some good, reliable, assayed and standardized preparation of opium itself to any of its alkaloids, including morphia. The gum has therapeutical qualities not possessed by the alkaloids singly or in combination, and my experience agrees with that of Krafft-Ebing that opium has a beneficent influence on the trophic centers, which is not true of morphia or the other known alkaloids. Under its judicious use, the patient's nutrition improves and in a way that it is not altogether explicable by its ablation of worry, misery, and distress. Besides the opium has the advantage over morphia hypodermically administered, that the intelligent patient need not, in fact ought not, know what he is taking, and thus

avoid the habit which we should guard against by all means in our power. To the sedatives hyoscyamus, gelsemium, conium, the bromides, I cannot refer at length, but suffice it to say I employ them still in selected and suitable cases, but usually as remedies of last resort and supplemental to other treatment. In maniacal and delirious conditions, I first endeavor to calm the cerebral storm by means of warm baths, generally combined with steady and continuous cold to the head during bath and after when an active, that is arterial, cerebral hyperæmia is present. Besides this derivative, treatment like mustard applications to the extremities are serviceable in these conditions. When all this fails sedative narcotics may be called in aid. My experience with ergot in this condition has not been good. Reasoning about the matter would lead one to expect this. The stimulation of the vasomotors is general and favorable to passive cerebral hyperæmia. But if I had to choose between the whole class of sedatives and ice, I would unhesitatingly choose the latter. In a not inconsiderable experience it has served me best, and when properly employed it has proven a reliable friend. As such it must have our confidence and like every other remedy be employed with intelligence. Kindly note here that I said active arterial hyperæmia. The passive venous congestion of the brain due to right cardiac weakness or vascular atony requires an altogether different treatment.

Sleep is nature's time for restoration and restitution of the worn brain, whether in disease or not, and sleep is the one prime essential necessary in the treatment of insanity. In my treatment, what I said concerning sedatives applies with equal force to hypnotics. When I cannot secure for my patient necessary sleep by baths and other less strenuous means I do not hesitate to give hypnotics and this in no half-hearted, timid way, but in a quantity and manner adequate to produce the desired result. Usually when a hypnotic is employed as supplemental to the prolonged warm bath, no extraordinary dosage is required. Here, as elsewhere, in the employment of sedative medicines, special care is taken to guard against routine and class treatment, but the medicine is given as needed and no more. I thus employ trional, sulfonal, paraldehyde, and chloral and with satisfactory results. I here in this place wish to say a good word for the recently much

decried chloral hydrate. Given when needed only well diluted, preferably in a glass of beer, or by enema, it has proven reliable and efficient and quite safe in my hands. There need not be any habit formed. While my experience with the remedy has been extensive, I can truthfully say that I have not been instrumental in the formation of the habit in any one.

Of alterative treatment, mercurials and iodides, valuable as they are elsewhere in the treatment of cerebral disease underlying certain insane conditions, I cannot say much. In my experience they have proved disappointing, and whatever of good appeared on their use, could be well ascribed to the dietetic, hygienic, and other side treatment. Still I would not proscribe this line of treatment, since these remedies are usually employed in such inveterate, desperate, and hopeless conditions, in which other treatment is also unpromising, so that they may serve as a forlorn hope. Perhaps a better acquaintance and study with these medicines in cerebral disease may in the future yield useful results. Such vast fields in biochemistry are still a *terra incognita* that research holds out much hope for discovery and achievement.

It will be observed that not much mention is made of the new or synthetic remedies which have appeared of late years. Some of these I have found to have actual value and others have given me but little or no service, and I could have gained as good and better results from older members of the *materia medica*.

As to a goodly share of the flood of medical literature exploiting these new remedies, it must be taken *cum grano salis*. Only too frequently these so-called contributions to medical knowledge bear internal evidence of the brief of the advocate, rather than that of the opinion and sentence of the judge. Human life is too sacred, and health too priceless a possession to have either trifled with by injudicious experimentation. Moreover, we have in the old *materia medica* remedies which deserve our closer cultivation, and which on better acquaintance will prove true and trusty friends in a time of need. But that they may be useful to us we must know them intimately and then trust them instead of some new thing from over the sea.

The burden of my contention is briefly this: There is a balm in Gilead; but to make it such it is necessary to know the condition

it is to remedy and how it is to be applied. This means that we must not only study the human body in its various parts and as a whole, its functions in health and disease, but also the remedies at our service with equal zeal. If the attention of my younger colleague can be drawn to the fact, that a thorough acquaintance with the physiological action of our therapeutical agencies is practically of equal importance with physiology and pathology, in order that an accurate diagnosis of the disease may be followed by an equally accurate diagnosis of the remedy, the purpose of this essay will have been served.

THE TREATMENT OF STATUS EPILEPTICUS.

By M. L. PERRY, M. D.,

Superintendent State Hospital for Epileptics, Parsons, Kansas.

The care and treatment of epileptics present many problems, but there is none more difficult and perplexing than the management of the status epilepticus. This condition, which has been termed "the true climax of epilepsy," occurs with greater frequency, both in institutions and in general practice, than many authors would lead one to believe. It is not restricted to any type of epilepsy, and, while only a small percentage of epileptics develop status, it is liable to attack anyone so afflicted for there are none who are immune. It is one of the greatest dangers which threaten those suffering from epilepsy, and one who is not thoroughly prepared to meet the emergency presented by this complication should not attempt the care of such patients.

The treatment of status may be divided into four periods:

1. The period of invasion or threatened status.
2. The period of active convulsions.
3. The period of stupor.
4. The period of post status depression.

As it is a part of the symptom-complex of epilepsy, it follows that anything exercising a beneficial effect upon the general course of this disease will act as a prophylactic to the development of status. Thus the regular and systematic life of a properly conducted colony or hospital tends to prevent the development of this condition. Likewise, judicious sedation, continued over a long period, often holds the disease in check and its sudden withdrawal precipitates status. The manner of its development is quite variable; it may be rapid with few if any prodromal symptoms, but the more usual method of invasion is by a more or less gradual increase in the seizure frequency. Any case, therefore, showing a marked increase in the number of seizures should be looked upon as a possible beginning status and treated accordingly. Prompt

and vigorous methods in this stage will often abort the threatened attack. There are two indications for treatment in the period of invasion, namely: to check the increasing number of seizures and to promote elimination. As soon as it becomes apparent that the patient is suffering from a series of seizures, full doses of sodium bromide combined with chloral hydrate should be given to check the paroxysms. Chloral is one of the most reliable drugs which we have for this purpose and may be given with safety in this stage. It is so depressing to the heart, however, that great care must be exercised in its use in the later stages. At the same time the patient should be put in a tub bath of a temperature of 105 degrees F. for fifteen to twenty minutes. The effect of the hot bath in checking seizures is often very marked. It produces a sedative effect without the later depression which follows the use of drugs for that purpose, and it also promotes elimination. This valuable therapeutic agent has been all but disregarded by the authorities upon the subject as very little mention is made of it in the literature. I consider it a very efficient aid and one which should be used in all cases. I have seen well developed series of seizures checked by this means alone.

A free evacuation of the bowels should be obtained by the use of a brisk cathartic followed by an enema. It is well to follow this practice as a routine in the period of invasion. Constipation is present in many of these cases, and if the effort to relieve it is deferred until a later stage it is often difficult or impossible to obtain satisfactory results from even drastic cathartics.

If the case be a severe one, and especially if it be of the fulminating type in which the paroxysms occur in rapid succession from the very beginning, we should not depend upon medication by mouth, for stomach absorption in such conditions is very uncertain, but resort at once to the quicker and more definite hypodermatic method. The two drugs par excellence for this purpose are morphine and hyoscine; $\frac{1}{4}$ gr. or $\frac{1}{3}$ gr. of the former with $\frac{1}{50}$ gr. of the latter should be given at once and repeated in one hour if necessary. I wish to emphasize the fact that to obtain the best result from these drugs they must be given in full doses. A failure to get results is often due to an unwarranted timidity in their use. Gowers, in discussing the treatment of status, says: "Morphia has been injected with great success in some cases, but

only in doses which are fraught with danger, $\frac{1}{4}$ or $\frac{1}{3}$ gr. Those which may be safely employed ($\frac{1}{12}$ and $\frac{1}{10}$) are seldom effective, although they may sometimes deserve a trial if other measures fail; the small doses may be given every two hours and the effect watched." I thoroughly agree with him that the minute doses which he recommends are seldom effective and I consider them absolutely worthless, but my experience is at variance with his statement regarding the danger of giving this drug in full doses. I have seen morphine given in $\frac{1}{4}$ and $\frac{1}{3}$ gr. doses in many cases of status and have never observed any bad results from its use. At the same time that the sedative is given the patient should be put in the hot bath described above. If such a course of treatment does not check the seizures the patient will pass into the second or convulsive state.

It may seem that I have given an unnecessary amount of attention to the period of invasion or threatened status. I have done so intentionally, as I wish to emphasize the importance of vigorous and energetic treatment in this period. I know of no other disease in which prompt treatment of early symptoms is more imperative. It is the keynote in the management of this condition.

In the convulsive stage there is an exacerbation of the symptoms of the period of invasion with a rise of temperature, increased pulse rate, respiratory embarrassment, and complete unconsciousness. For the control of seizures the measures already mentioned for that purpose may be repeated. It is not always possible to relieve this distressing symptom, but if the paroxysms are severe and of great frequency an extraordinary effort should be made to reduce their number or severity. The prostration and exhaustion which are to follow will depend much upon the extent to which the convulsions have been controlled. Here the hypodermatic administration of morphine and hyoscine should be used if they have not been given previously in full doses. Bromides and chloral hydrate may be introduced into the stomach by means of a tube or given by rectum. The latter method, which is the one usually recommended, is slow and uncertain. Hypodermatic administration of the bromides has been advised, but as it is very often followed by extensive abscess formation it is not desirable. The subcutaneous injection of saline solution is recommended and it would seem to be a rational line of treatment, but I have not

seen the good results from its use which some authorities claim. Repeated disappointments in its use have led me to suspect that it might possibly be contraindicated because of the chlorine which it contains. At the Parsons State Hospital, we have been using for the past year inhalations of oxygen in the convulsive stage of status with good results and I would recommend its use in all such cases. I was led to use this agent in status by an article published by Dr. Sajous, of Philadelphia, on "The Relation of the Internal Secretions to Epilepsy, Puerperal Eclampsia, and Kindred Disorders." In this article the author takes the position that "oxidation is the underlying factor which prevents either directly or indirectly, the accumulation of spasmogenic elements, and that as a result of increased oxidation or tissue respiration the blood may be purged of its toxic convulsive elements by their conversion into benign eliminable products." If this theory is correct it is reasonable to expect a beneficial result following a surcharging of the blood stream with oxygen. But aside from this theoretical indication there is a plain and decided call for the administration of oxygen in practically all cases of status. Cyanosis is the rule in these attacks and in many cases it is extreme. It is the result of interference with the respiratory movements and a pulmonary hypostasis which is present in all severe attacks. This faulty aeration of the blood, with the accompanying accumulation of poisonous substances, cannot fail to have a deleterious effect upon a patient already suffering from a profound toxemia. Inhalation of oxygen will relieve the cyanosis promptly, and it seems also to exercise a beneficial influence upon the course of the disease. It does not appear to have been used much in this condition, as I have seen but one reference to it, and that a very casual one.

When the temperature becomes alarmingly high, and it not infrequently reaches 105° to 106° F., it must be reduced. No patient can endure such high temperature long and survive. Cold baths or the application of cloths wrung out of ice water and frequently changed is the most satisfactory method of reducing the temperature. I recently observed a case in which this method was very effective in reducing the temperature. The patient was suffering from a fulminating type of attack, having had 20 recorded seizures in less than three hours. There was a rapid and steady rise of temperature to 106° F. Bathing with ice

water was resorted to with the result that the temperature was reduced to 99° F.—a fall of seven degrees—in one hour. The patient finally recovered.

After the cessation of the convulsions there follows a period of more or less profound stupor varying in severity with the amount of exhaustion resulting from the paroxysms of the second stage and the amount of sedation given. If large doses of sedatives have been used, especially drugs depressing the heart, as chloral, their effect upon that organ must be counteracted by heart stimulants. Digitalis or strychnine in full doses should be given hypodermatically. Strychnine is to be preferred and it may be given without fear of its excitor-motor effect producing a return of the seizures.

One of the most serious complications to be guarded against in this stage is the development of hypostatic pneumonia. The patient is comatose and is thoroughly relaxed and usually assumes the dorsal decubitus. The nurse should be especially charged to shift the patient from this position frequently or a pneumonia will result in a large percentage of those cases in which the stuporous stage is prolonged.

There is in this period quite a demand in the system for fluids, and as there is usually inability to swallow, water should be introduced into the stomach by tube or given by enemata. Stimulants and nourishment should also be given by tube until the patient is able to swallow. As the digestive powers are very much below par a predigested nourishment should be used and administered in small quantities frequently.

The period of post status depression is often prolonged for weeks and calls for careful observation and efficient nursing. The occurrence of any seizures during this period should be prevented if possible. To guard against this, mild sedation may be continued. Insomnia is often present and is an extremely annoying symptom. For its relief the simple hypnotics as trional or sulfonal may be given, and if they fail a warm bath or warm pack at bed time will often prove efficacious. Great care should be taken to prevent the development of bed sores which not infrequently occur in this stage of severe attacks of status. The resistive powers of the patient are very much reduced and any extra drain upon his vitality lessens the chance of recovery. Patients will some-

times weather the storms of the convulsive and stuporous periods only to die a week or two later from exhaustion. After especially severe attacks, the patient is often left in a typhoid state requiring the usual treatment indicated for that condition. A highly nutritious and supportive line of treatment should be continued until the usual physical health is entirely regained.

SUMMARY.

The salient points of this paper may be summed up as follows:

1. The necessity for early treatment.
2. The importance of the hot bath, and morphine combined with hyoscine, to check convulsions.
3. The beneficial effects of inhalation of oxygen in the stage of convulsions.
4. The necessity for reducing excessively high temperature and the use of ice water for this purpose.
5. The care to avoid the development of hypostatic pneumonia.
6. The importance of nourishment and efficient nursing during the entire period of post status depression.

DISCUSSION.

DR. FULLER.—If I may mention one pathological feature of dealing with status epilepticus, I would call attention to Fig. 1, a case of status epilepticus. It was said that this patient had 200 convulsion in a few days. I found the neurofibrils as well preserved as in the normal man.

DR. HUGHES.—The practice of giving chloral hydrate in status epilepticus originated in West Riding Asylum, and I very well remember, in my early days that the practice of giving one gramme of chloral hydrate, which had then been recently introduced by the Schierings, came to me from the practice at West Riding Asylum—they gave it there per rectum. When a patient falls into the epileptic status you have to use the rectum or the skin. It is very seldom that you can get anything into him by way of the mouth and chloral cannot be given hypodermically in adequate dosage.

I have the honor of having produced a status epilepticus in my experience. When I took charge of the surgical department at Fulton, Missouri, I operated on every case of traumatic, acute or chronic, I could find in the institution. I had then more experience in surgery than in psychiatry. I may say that my success as an operator, while my patients ordinarily survived, was not very satisfactory in the chronic forms of epilepsy. I discovered that the knife would not eradicate the chronic neurone change of epilepsy. I did not then know an old epileptic, not

purely brain pressure, habit could not be cut out with the lifting of a piece of depressed bone, or removal of a tumor of long existence.

I took out three buttons of bone in this man. The third was a spicula that was driven down into the cortex and the membranes with it. I lifted them up and the patient went into an epileptic seizure and continued from one to another until he died. That was before I had begun to use chloral hydrate. Later the amorphous hyoscyamus, and now the hydrobromate of hyoscine tablets, are very satisfactory forms, but I still adhere to chloral hydrate. The introduction of oxidation, I presume, will prove one of the best remedies, not only for resisting the status epilepticus, but in any form of epileptic seizure, because it produces deep breathing and enables the patient to get the oxygen that is cut off by the force of the epileptic seizure and the convulsive result in the obstruction of the normal flow of blood from and to the head. The spasm of the cervical muscles, especially the sterno-mastoid, cuts off the blood flow and results in a condition of narcosis, after which the spasm is relaxed. Chloral hydrate will relax that spasm. I have never had a second case die in the epileptic status.

I do not think chloral hydrate should be abandoned. It is one of the greatest of several valuable therapeutic discoveries made at the West Riding Asylum. I have employed and advised the use of chloral enemata in convulsions of children and puerperal eclampsia and in tetanus and tetanoid affections for a third of a century.

DR. M. L. PERRY.—In regard to the doctor's report of the condition of the cortical cells in his case of status, will say that there was published a few years ago a comprehensive study of the condition of the cortical cells in status epilepticus by Dr. Clark and Dr. Prout. They found a well-marked pathological state in the cortex in their cases of status, but the cells of the second layer were the ones chiefly involved. These small pyramidal cells of the sensory type showed evidences of severe degeneration, such as eccentricity and destruction of the nucleus. The lesion was very much more pronounced in this type of cells than in the larger motor cells demonstrated by the doctor.

MAL-ASSIMILATION AS A CAUSATIVE FACTOR.

By J. FRANK EDGERLY, M. D.,

Newtonville, Mass.

Some one has said that the foundation of health rests upon a good digestion. It is true that the mechanical and chemical preparation of food for distribution into the circulation, the conversion into textures identical with its own, of such foreign molecules as are fitted for its nutriment, and the excretion or expulsion of all foreign particles (these processes being mutually dependent) are essential requisites to the function exercised in the growth and development of the healthy body and the maintenance of a normal physiological standard.

Mal-assimilation as a causative factor in disease has been recognized and has engaged the attention of physicians for many years, but I believe that a *deeper* interest should be taken in this subject and has been manifested to some extent, by investigation in the physiological chemistry of digestion, and the demonstration of pathologic conditions, showing changes due to deleterious agents in the blood, in quantities that affect the nervous system, interfere with general nutrition and cause other physical disturbances.

These deleterious agents are probably due to the absorption of toxins, carried into the circulation and distributed to the tissues.

The normal habitation of micro-organisms is the gastro-intestinal tract, and it has been demonstrated that this tract harbors toxemia of every sort. From the inorganic ferment in the saliva to the putrefactive ferments and ptomains found in the larger intestines, with all the intermediate toxins from the baby germ to the complete adult bacteria, taking part in useful activity or being discarded as waste matter.

If we accept the toxic unit ratio determined by Bouchard, a normal man excretes a quantity of poison sufficient to kill himself in fifty-two hours. If this conclusion is true, it is important and worthy of our attention.

In a healthy state, when digestion, assimilation and excretion are normal, agents are produced in the alimentary canal for neutralizing, regulating, arresting, and discarding all toxins and waste matter, imbibing and absorbing all nutritive elements. Among these agents are the gastric juice, bile, leucocytes, and other natural anti-toxins, aided by the epithelium and mucous surfaces.

But when the defences are broken down by disease, and the system weakened from any cause, whether by unsanitary living, repeated and prolonged shock, exposure or continued irregularity, nature must, in time, fail in her effort to preserve a nice adjustment of its functions, and cannot resist the invasion of, and is unable to excrete the ever increasing bacteria which are absorbed and further affect the general nutrition. One of the first steps in the progress of failure in this weakened state is interference with the normal motor functions of the stomach and intestines. We all know how important the peristaltic action of these organs are in preventing fermentation and putrefaction. The peristaltic action of the intestines is retarded by the diminished flow of the bile which has a direct influence upon it. Hence a continued increase of toxins and putrefactive gases operating to diminish the resistance to disease and conduce the disordered metabolism and toxin infection. According to Robertson, the toxins are formed in too great quantities to be excreted or destroyed, and are absorbed. The vessels of the central nervous system are especially sensitive to the toxins and undergo proliferative and degenerative changes. In consequence of the structural changes, the nutrition of the adjacent nervous elements is interfered with.

These vascular changes tend to set in earliest in those parts that are relatively best supplied with blood, because their walls are brought in contact with the largest quantity of toxin.

Dr. Dent of the Manhattan Hospital, New York, says it is conceded that the most prominent physical symptoms we find in insanity are caused by disturbance of nutrition due to derangement of the gastro-intestinal tracts. A considerable number of well-known observers have given their opinions that a *majority* of the nervous and mental disorders have, as their basis, a bad assimilation. My own observation accords with these opinions

and is strengthened by close study and observation of a large number of patients, many of whom have appeared badly nourished and have given evidence, upon the examinations of secretions, of poor assimilation and toxic infection. After determining as fully as possible the condition and degree of their troubles, they have been placed upon appropriate diet, medicine, exercise, baths, rest, etc., according to their apparent individual needs, the purpose being to nourish, stimulate, and support the excretory organs and provide a *general* support. In each case there was a gratifying response, *all* showing improvement, *almost all* a very great improvement, and *a majority* either a full *restoration* to health or an *intermission* of apparently good health. It is significant that many of the cases referred to had mental troubles of long standing, and the group presented examples of the following disturbances: Neurasthenia, emotional disturbance, depressive state, insomnia, general restlessness, obsessions, delusions, hallucinations, confusion, paranoia, dementia, and paralysis. My apology for presenting this subject with which you are all so familiar, and for presenting it in a way by no means academic or even scientific, is that I have been impressed by the evidence of suffering caused by nutritional disturbances and relieved by treatment directed toward correcting this cause. Also hoping that, by rethreshing old straws, some good grains may be found, and that scientific investigators will continue to follow a line of research that will throw light upon and help to solve this problem, to the end that we may recognize in symptoms that now seem unimportant, danger signals, that point to nervous breakdown.

STATISTICS OF THE INSANE.

By MR. JOHN KOREN,

Bureau of the U. S. Census, Washington, D. C.

It is difficult to contemplate our so-called statistics of the insane with any large degree of satisfaction. Indeed, I fancy that not a few who are directly concerned with the compilation of such statistics loathe the very name. Yet I need hardly enter upon a defence of the science of statistics before an assembly like this. A good many years ago, Buckle remarked that in the course of fifty years statistics had added more to the sum total of human knowledge than all the other sciences combined; and that remark was made at a time when the science of statistics was little developed.

The difficulty so far as the application of statistics in matters pertaining to the insane is concerned seems to me to lie largely in the fact that people are prone to mistake any tabular statement of figures for statistics. Figures are merely the raw material of statistics; and we should dignify by the appellation statistics of the insane only such facts as have been properly correlated and are capable of an exact interpretation. A jumble of unrelated facts translated into figures and open to almost any interpretation the reader may choose is worse than useless, for it misleads the student and makes the unthinking regard statistics as of all things the most unreliable.

It has been my duty of late—I cannot honestly say pleasure—to examine the annual or biennial reports of all public and some private hospitals for the insane in the United States, for the purpose of culling from them comparable statistical material. At the risk of being less complimentary than I desire to be, it must be confessed that very few of these reports are models so far as the statistical presentation of matter is concerned. A just grievance against not a few of them is that they ignore essential facts. The first minimum requirement of a hospital report is that it should

embody a clear statement of the movement of population for each 12 months, showing the number of patients on hand at the beginning of the year, the number of admissions, discharges, deaths, and transfers to other institutions, the number remaining at the end of the year, and the daily average number of patients. The second minimum requirement is that the statement of financial operations should so differentiate between the items of expenditure, that the reader may not be left in doubt as to which items of expenditure are incurred for permanent improvements, which for subsistence and ordinary repairs, which constitute income, etc. In other words, the financial statistics should be so arranged that any one having the population facts at hand can unerringly figure the gross and net cost of maintenance. What I have said about the minimum requirements are of so elementary a character, that I almost hesitate to mention them. Yet so long as the elementary facts are not presented what hope is there for higher things.

An over elaboration of trivial statistical details is not infrequently met with, but I shall dwell on it. Of vastly greater moment is the lack of uniformity and of adequate interpretation of statistics. Let us consider for a moment how far uniformity in statistical statements concerning the insane is practicable. In all matters pertaining to institution finances and population facts, by which latter I mean the number and movement of patients, their distribution according to color, sex, age, nativity, parent nativity, race, occupation, etc., uniformity is feasible and highly desirable. It is largely a question of adopting simple but adequate forms. In other words, the facts about the individual patient considered merely as a human individual in his relation to the hospital, could and should be recorded and stated by practically all according to a uniform pattern. But of what possible usefulness is it to make long tabular statements with distinction as to such matters as nativity, parent nativity, by sex, ages, occupation and the like, unless these facts are studied in connection with the distribution of the general population in the same elements?

None of the population facts I have mentioned is superfluous as a matter of record concerning the individual. They aid more or less to a diagnosis of his condition. But when you mass such facts in an annual report, they are utterly meaningless unless

properly interpreted, which is the business of the statistician rather than of the physician. The world would lose nothing and some hospital officers would save themselves hours of weary labor by foregoing details concerning country of birth, parent nativity, previous occupation, etc., etc. To present such details accompanied by competent analysis of each table would be a different story.

A far more difficult phase of the situation is presented by statistics dealing with medical aspects of insanity. The group of statistics so far considered is concerned with facts which if truly stated can only be stated one way. You cannot go behind the returns in regard to population and financial matters. But what relates to forms of insanity, their origin, recovery from the disease, etc., are things that cannot easily be translated into figures according to a set standard, because the phenomena are capable of various interpretations according to the theories and perhaps authorities followed by the individual who makes the diagnosis. For about fifty years, I am informed, more or less sporadic efforts have been made to secure a uniform classification of the manifestations of insanity; and until a more general agreement has been reached than now appears to be the case, the statistics relating to this aspect of insanity must of necessity be inharmonious, and to the layman rather misleading. But would it not help to clarify the situation if those who set out a tabular statement of forms of insanity would interpret it and give their reasons, or at least not put forth, what must be tentative things, as hard and cold facts?

As you are well aware, any attempt to compile general statistics showing forms of insanity for even a majority of the hospitals for the insane would at the present time lead merely to confusion. Therefore, when it became my duty to prepare a report on the insane in hospitals for the federal government, I persistently refused to take any note of forms of insanity, although my honored predecessor had done so. When it is sought to go further and to discover for instance the relation between specified forms of insanity and certain kinds of occupation, labor is not only wasted, but it is difficult to take the effort seriously.

Another group of medical statistics frequently of dubious value

is that usually given under the heading "Assigned Causes of Insanity." The extreme difficulty in many instances of assigning any one cause of insanity probably appeals much more to you, gentlemen, than to a mere statistician. And are there not innumerable instances into which several causes appear to enter which no ingenuity can disentangle from each other? Yet the uniform rule is to ascribe to each case one solitary cause. You experts may know how to take statistics of causes of insanity at their true valuation. The rest of us do not. Statisticians, sociologists and preachers, however, seize upon everything labeled cause and may use it as a text for unscientific, and, therefore, misleading doctrine. I have recently compiled as a test—I shouldn't dare to publish it—a lot of statistics bearing on causes of insanity, and I honestly believe that most of the conclusions to be drawn would not be accepted by a single one of you. Since the subject is one bristling with often insuperable difficulties, and, moreover, can hardly be dissociated from the personal equation, why treat it in statistical form? I have not had the fortune of meeting an alienist who did not treat the current statements of causes with more or less open contempt. But please remember that the layman accepts them as gospel truth.

I shall air one more grievance and have done. It relates to statistics of recoveries. Much to the disgust of some men, I refused in my report on the insane to tabulate any persons discharged from hospitals as recovered, and others as merely improved. Aside from the fact that so few persons are fully restored to the condition they were in previous to becoming insane, I maintain that it is impossible to secure a distinction between cases recovered and cases merely improved that will result in absolutely fair and comparable percentages. Is it not inevitable that such percentages should reflect the temperament of the one who makes the diagnosis? The sanguine man will see in a case showing decided improvement a recovery which the very conservative and not over-optimistic man will hesitate to pronounce other than as improved.

It seems to me that this affords a reasonable and not unkindly explanation of the extraordinary variations in the percentages of recoveries reported by different institutions. I should hesitate to

say that any man was trying to make a record through reporting recoveries that were not bona fide. But since experience shows that current statistics of recoveries lead to wholly unwarranted and sometimes unjust inferences, why maintain a classification which is known to bring such results? Is it not sufficient to differentiate between the improved, the unrecovered and the not insane? One thing is certain: So long as the prevailing distinctions are maintained, it is possible to demonstrate that in some hospitals are marvellous curative establishments, while others dealing with precisely the same kind of cases show but indifferent success. But is this strictly in accordance with truth?

When I received the unexpected invitation to address you it was, presumably, in hopes of getting some practical suggestions. It may seem to you that I have devoted most of my limited time to criticism. Yet I have something positive to offer as a means of paving the way toward greater uniformity of statistics of the insane. A committee on statistics of the National Conference of Charities and Corrections has recently prepared two forms which it is proposed to send to each hospital for the insane. One relates to the movement of population, and the other to financial matters. They are designed to secure wholly adequate yet simple and uniform reports on two important subjects. Accompanying the forms will be a request that in the future institutions model their annual returns on these forms and publish them in their annual reports. I trust this will lead us one step in advance.

RETROSPECT—PROSPECT.

By H. C. EYMAN, M. D.,

Medical Superintendent Massillon State Hospital, Massillon, Ohio.

The care of the insane has always been the most stupendous problem with which philanthropic minds have had to deal. In a retrospect it will be necessary for us to go back even farther than the Christian Era, and to follow down through the ages twixt hope and fear, until the steady and persistent light of the present century has poured its effulgent rays into the mouldy past, and by its mighty purifying action has given life to the dainty thread of humanity which had well nigh become insensate. Up to the beginning of the nineteenth century the insane had been kept in dens and cages, foul, uncared for, and reeking with the germs of disease. Reforms in the methods of the care of the insane, like all reforms, were considered unwarranted innovations, and the man who would attempt to unchain these poor wretches was considered little less than mad.

The methods in vogue in early ages were due wholly to fanaticism, superstition, and ignorance, which were well nigh universal. Yet we would not have you understand that fanaticism and superstition belonged wholly to the ignorant.

James VI of Scotland, afterwards King of England, wrote a learned dissertation on demonology. The belief in demoniacal possession held sway from earliest times down to recent ages, and I regret to say is not even yet wholly eradicated. Only a few years ago, in our own beautiful and progressive Ohio, an entire community suffered from the frequent visits of a black cat. The cows gave bloody milk, the people died of fear, or became possessed of the devil. What finally became of the black cat, history relateth not, but those demoniacally possessed were taken to the State Hospitals for treatment.

From the earliest times, of which we have knowledge, at any rate as far back as a thousand years before Christ came upon

earth, we can trace the history of mental disease; but in ancient times it was but little understood, and indeed was comparatively rare. I am a believer in the doctrine that the history of this world is a cycle; that history repeats itself; that the ultimate tendency of civilization is toward barbarism. That there was a degeneracy in the methods of care of the insane from the days of antiquity down to the beginning of the present century, I think there can be no doubt. History informs us that the ancient Egyptians employed the priests, together with their supposed all-potent agencies to look after this unfortunate class of people, and their chief means of treatment was the influence of music and the beautiful in nature and art, together with healthy recreation and agreeable occupation. Many centuries ago the Greeks gave considerable attention to this subject, and they have placed themselves on record as opposed to the excessive use of bodily restraint in the care of the insane. They also advocated the importance of music and kindly treatment as well as employment.

The cycle is completed! History is repeating itself. The most advanced alienists of to-day advocate no more, no less. We can even go back to the remote ages before the Christian Era, aye a thousand years before, and we find that Saul was tormented by the evil spirit and afflicted with a deep melancholy, which was soothed by the music of David's harp. Several centuries later Nebuchadnezzar, King of Babylon, became insane, but the methods of care had undergone a change, and he was placed in a state of seclusion, "was driven from the society of men."

The methods of care of the insane depend almost wholly upon the prevailing ideas as to its nature and cause, consequently we find that just preceding and during the early days of the Christian Era, the idea of demoniacal possession being the prevalent one, the methods of care were necessarily cruel. The demon must be destroyed, or at least restrained, even to the destruction of the unfortunate being so possessed.

It is a curious fact that the word demon did not originally signify "devil," nor did it even have a similar meaning. It signified divinity, a guardian spirit. Plato assigned the name to that spirit with whom the Supreme Being intrusted the government of the world. The Jews, however, attributed all diseases to the agency of the demon. The dysentery which smote Joram was

referred to the same cause; from this it was an easy step to regard demon as the author of all that was bad, consequently and for this same reason hysteria, epilepsy, and melancholy were called sacred. "Man dependent by his organization upon external influences and passing alternately from well being to sorrow, from pain to pleasure and from fear to hope, was naturally led to reflect upon the nature and relations of good and evil." He soon became impressed that there was a good being and a malevolent spirit which presided over his good or ill fortune. This was probably the first step toward theology. Of course, under this system of theology, religion was "now gentle and full of consolation, now she assumed a severe and threatening tone." But man's existence, having been almost entirely pervaded by sorrow and pain, the almost universal heritage, ideas of depressing character predominated. Fear and terror are but a remove from sadness; a religious melancholy was the direct result. All nations and all people appear most strangely impressed by religious convictions; consequently, when the worship of the true God was abandoned, there was something in man calling for adoration, and in this state the first objects of adoration were the stars. From this the so-called science of astrology had its origin. Now, carrying this thought is it strange that religious melancholy was regarded as dependent upon the stars? And, further, its periodicity strengthened this belief.

The insane were thus called lunatics, which you know literally means "moonstruck." It is not strange that the people believing these unfortunates to be "moonstruck" and "possessed" would either try to drive out the demon by extreme cruelty, or insist upon strict seclusion for the one, upon the leaves of whose future the horoscopist had painted so clearly the shadows of despair.

Christianity, by bringing back religious views to the unity of God, by discrediting oracles and by its general enlightening effect upon men, to a large extent corrected these false doctrines. Long before this, however, Asclepiades recommended music and kindly treatment. It might also be of interest to note that this physician who lived so long ago had some real knowledge of the effects of drugs, and while he does not advise their use, yet he refers to hyoscyamus and opium, the very drugs used most extensively to-day. Caelius Aurelianus was perhaps the most humane of all

the alienists of antiquity. He regards it as necessary that the patient have a large airy room, well lighted and well ventilated. The duty of the attendants was clearly laid down. They were to be careful not to exasperate the patient, not to agree with him in his delusions, but to change the subject and endeavor to correct his delusion by calling out his natural abilities. He gave very careful directions as to how to place the beds to shield the patient's eyes from too great light, gave directions as to diet, and in fact, would be regarded as abreast of the times to-day. Now, the turn of the wheels seems to be downward. From the days of Caelius the methods of care constantly became more and more cruel, though of course isolated cases of kindly treatment might be met with. It would certainly have grieved Caelius sorely could he have stepped into the House of Commons eighteen hundred years later, and heard the Earl of Shaftesbury make use of these words in referring to the insane: "The whole history of the world until the Reformation does not afford an instance of a single receptacle assigned to the protection and care of these unhappy sufferers, whose malady was looked upon as hardly within the reach of hope or medical aid. If dangerous they were incarcerated in common prisons; if of a certain rank in society they were shut up in their houses under the care of appropriate guardians, chains, whips, darkness, and solitude were the approved and only remedies."

This severe arraignment is practically, though not wholly true, as we are informed that the Jews had built a hospital at Jerusalem as early as the fifth century. Bethlem Hospital was the first of its kind to provide for the care of the insane in England. In 1547 Henry the Eighth ordered that it be used for the reception of lunatics. Dr. Brown thus describes the asylums of the eighteenth century.

"The building was gloomy, placed in some low confined situation; without windows to the front, every chink barred and grated; a perfect gaol. As you enter a creak of bolts and the clank of chains are scarcely distinguishable amid the wild chorus of shrieks and sobs which issue from every direction. The passages are narrow, dark, damp, exhale a noxious effluvia and are provided with a door at every two or three yards. Your conductor has the head and visage of a Carib; carries a whip and a

bunch of keys, and speaks sharp monosyllables. The first common room you examine, measuring 12 feet long by 7 wide, with a window which does not open—is perhaps for females. Ten of them with no other covering than a rag around the waist, are chained to the wall, loathsome and hideous, but when addressed evidently retaining some of the intelligence, and much of the feeling, which in other days ennobled their nature. In shame or sorrow one of them perhaps utters a cry—an additional chain, a gag, an indecent or contemptuous expression produce silence. And if you ask where these creatures sleep you are led to a kennel eight feet square, with an unglazed air hole eight inches in diameter; in this you are told five women sleep. The floor is covered, the walls bedaubed with filth and excrement; no bedding but wet, decayed straw is allowed, and the stench is so insupportable that you turn away and hasten from the scene.”

Mark what a fall from the days of kind Caelius; but the approach to this dreadful and inhuman method was gradual, each decade bringing an additional burden to the most unfortunate of God's people. The darkest hour before the dawn. Simultaneously in France and England God had raised up two noble-minded, tender-hearted physicians, whose lives were devoted to the amelioration of human suffering.

The very year 1792, when the immortal Pinel was striking off the shackles and bonds of the miserable inhabitants of Bicetre, William Tuke proposed and established the York Retreat, where the first methods of kindly treatment in England were inaugurated. The managers of the Retreat did not at once perceive how far the lunatic might be permitted to enjoy liberty, or to what extent his feelings and better judgment might be appealed to. But no chains of any kind, no hobbles, leg locks or handcuffs were employed from the opening of the establishment. A patient was admitted who had been for twenty years chained and naked. With the exception of the occasional use of straps, no personal restraint was employed from the moment of his admission. He was soon induced to wear clothes and adopt orderly habits.

Another patient had nearly lost the use of his limbs from similar usages, and for some time after his admission it was necessary to lead him about like an infant. He was found to require

no restraint and was, after a while, able to walk without assistance. When one of his friends visited him, and asked what he called the place, he replied with earnestness, "Eden, Eden, Eden."

We are proud to say that the last two decades have witnessed pronounced and substantial advancement. America has furnished her share of noble-minded progressive humane alienists. The East has given Dr. John P. Gray, the South Dr. Peter Bryce, and Ohio is equally proud of the successful war waged against mechanical restraints and solitary confinement by the scholarly, keen, and intrepid Gundry. A little more than two decades ago this mature man with the heart of a child, began and carried to a successful issue a war against the cruel and brutal practices then in vogue in some of our American institutions for the care of the insane.

As a worthy successor to this intellectual giant, memory of our beloved Richardson will instantly fill your mind. A little more than a score of years ago it was our golden opportunity to be associated with this exceptional man, and his wise counsels have ever since been the guiding star of our ambition. At that day a large number of our institutions found constant use for the crib, the camisole, the muff, the straight jacket and various other means of restraint. To-day the crib is a relic, and the various straps, buckles, muffs, etc., are kept merely to emphasize the progress of the decade. The massive three and four-story buildings which were thought to be the acme of perfection are now only used because of the immense sums of money used in their construction. One of the first institutions in the country, wholly upon the cottage or segregate building plan, is at Toledo, Ohio. The success attendant upon its opening, the little less than marvelous results which were accomplished in the inauguration of the absolute non-restraint idea, convinced the doubting Thomas that the trite motto of Ingersoll, "I am a believer in the restraining influence of liberty," was destined to supplant the older maxim, "The only safe lunatic is a restrained lunatic." I may be pardoned if I refer to one or two cases—Mrs. G. had been transferred from another institution where she had never slept outside of a crib. When shown to her room the first evening she asked for her crib. The attendant informed her that none were used in this institution. She answered, "Well, I'll tear the lining out

of this room." The next morning we found that she had kept her word. The superintendent was sent for and asked her what her object was in tearing off the wainscoting, and otherwise demolishing the room. She answered, "Because I wanted to; you'll have to put me in my crib." The doctor said to her, "Well, now, we want the wainscoting torn off anyhow. I guess we will just give you a new room each night until you get tired." "Then you'll not put me in a crib?" "No, indeed." "Well, then, I guess I may as well behave myself." She slept quietly all night, and from that day destroyed no more furniture or bedding. In a few months she was convalescent and eventually recovered. She had been considered chronic and incurable.

Another patient who had been in solitary confinement for years was placed in one of the cottages, and conducted himself so well that the assistant physician recommended that he be given privilege of the grounds.

The Superintendent doubting the propriety, and fearing he might escape, questioned him concerning it. The patient seemed surprised when asked if he would attempt to run away, and said, "Don't you know what place this is?" "This is the New Jerusalem and a man would be a fool to leave here." A little later a working cottage was established, and finding it inconvenient to be constantly opening and closing the door, it was decided to leave it unlocked, and although not more than ten of the fifty patients had had privilege, yet not one attempted to escape.

So I might narrate wonderful results until they become tiresome, and still leave much to say concerning the amount of liberty allowed in this pioneer cottage hospital. Suffice it to say, that since its opening a decade and a half ago, more than 6000 insane people have been treated there, and there has never been a crib in the institution; restraint other than surgical is unknown, and solitary confinement reduced to less than one-thirtieth of one per cent. What has been substituted? Employment and diversion. The authorities have always maintained that insane persons should be treated exactly like sane persons, and to use the language of the distinguished Superintendent, "look through the lunatic to see the man, rather than through the man to see the lunatic." Fifteen years ago there were more cribs in one single

Ohio hospital than can now be found in all New York, Pennsylvania, Indiana, Illinois, and Ohio. We believe the most advanced alienists of to-day advocate the use of mechanical restraint only as a dernier resort, and using it as such almost always find that the patient can be controlled by some more humane method. In fact I never have ordered the use of mechanical restraint without the feeling that my resourcefulness is too limited. I believe we ought to be able to control the most unruly with milder means.

And now, just a few words as to the model hospital for the future. Let us concentrate our gaze, and attempt to pierce the heavy veil. What have we as alienists to promise posterity? I see a group of small cottages, cottages in fact not in name only, carelessly but harmoniously scattered among the trees, as though some great giant with an artist's eye had gathered them beneath his arm, and dropped them here and there. I see beautiful flower beds and stretches of green lawn, sparkling fountains and away beyond I see a cultivated garden, so large that it might supply every inhabitant of this enchanted spot with green vegetables, strawberries and, in fact, a taste of real spring and summer, and added to this I see ample provision for amusements and diversions, recreation and occupation. I pass the threshold of a cottage, and fear I have presumed to enter some one's private home, so cosy, so homelike, so utterly unlike the present day hospital wards that I stare in amazement. Some of the faces I see are somber, and some greet me with laughing eyes, and everywhere the atmosphere of comfort and refinement holds me enthralled. The nurses in immaculate white, speak in kindly tones to the afflicted and sorrowful, calmly yet firmly to those bubbling over with fun or mischief or malice. I inquire the reason of this ideal homelike contentment, and am told that the God of kindness rules here absolutely.

I hear a clattering of hoofs, and looking out I see a middle-aged, kindly man with hearty good cheer in his manner, alight from his buggy, and upon inquiry learn that this is the chief physician just arrived from his home in the city, to make his morning calls upon the sick. But, I inquire, "does not your chief physician have to remain at his post of duty twenty-four hours a day?" "Oh, no," I am told, "the chief physician lives in the city, and when he leaves in the evening he throws off the cares

of the day and enjoys the comforts of home, so that when he returns in the morning his mind is keen, his soul purified, and his labors here hearty and cheerful." "But does he not have to spend the greater portion of his time listening to complaints, and taking applications, or reprimanding and discharging inefficient help, or counseling with the farmer, the dairyman or the caretaker of the pigs?" "No, no. Nowadays the head physician of a cottage hospital (formerly the word institution was used, but that is now obsolete), is appointed because of his professional standing, and his exceptional learning, and the purely administrative features are left to a layman."

I inspect this man chosen for the most important position of superintendent or chief medical adviser, or chief physician, and find certain positive qualities regarded by the Hospital authorities as absolutely necessary for the eligibility of a candidate. His teeth are clean, his color good, indicating freedom from dyspepsia, for you know a dyspeptic man is querulous, uncertain in the temper of his mind, and apt to be morose and grumpy, and therefore unable to get the best results from employes and those committed to his care. He has enthusiasm, without which he would be of little use. He is quiet, cheerful, optimistic, he believes in his work, and inspires his subordinates to conscientious determination to succeed. He has chosen his life's work, and means to play fair with himself and his God. I notice a carriage driving under the portecochere of an especially attractive cottage, and upon inquiry am told that this is the receiving cottage. We approach the cottage through an avenue of shrubbery, and are admitted into a small room as pretty as taste can make it, and are received by a well-dressed, pleasant-looking, kindly nurse. The old plan of bringing patients into a large administration building, or the center portion of the massed plan building, where they are met by an officious or at best an official looking usher, and with dreadful, awful impressiveness are led into the reception room, where the clerk or assistant physician asks pertinent and sometimes impertinent questions, until the poor apprehensive patient imagines a veritable inquisition is being held; all this has passed away, and now the patient is taken directly and quietly to this immaculate cottage, and the necessary history taken afterward from the friends, and so the torture of the unsympathetic office parlor and

the queries of the busy doctor are avoided. In a short time the assistant physician arrives, and brings with him the fresh air, and wholesome mental balance obtained from association with sanity. This the desideratum, which the way?

I would strive to keep our assistants stimulated to the very best that is in them. I would advocate regular transfers from one State Hospital to another, so that all conditions and viewpoints may be presented to them.

It should be utterly impossible for any man to get a place as *head* of a cottage hospital who has not given evidence of masterful training in such work; and the responsibilities of such life having been put upon his shoulders, he should be sustained by adequate salary, by loyalty of managers, and by a definite provision for the time when his labors will have worn him out, and entitled him to rest and the dignity of retirement.

Of course our ideal hospital must have a consulting staff from the city.

I must not close without a plea for the nurse, the most important part of the hospital organization. No one should be allowed to enter the service who is not willing to devote himself to adequate training for it. There should be a regular system of examinations and promotions continued indefinitely after the diplomas are granted. I would advocate the awarding of prizes or medals for exceptional success, and teach the nurse that to her more than anything else are we dependent for the care and comfort of the patient, and I would teach her that her calling is "God given" and that she must be as self-effacing and self-sacrificing as the Master Himself.

And so the demon malice is driven from the field,
And the spirit of the Master is abroad,
And the harbinger of evil is compelled to yield
The trophies of the battle to the valor of our God.

The God of kindness reigns in every heart
In this ivy-covered ideal cottage home,
And in charity every one must do his part
In lifting weary souls from out the gloom.

For far within the ivory gate doth hide
The man, the real unwarped, the true,
And to roll away the stone of sorrow and of pride
Requires the work of all and not the few.

DISCUSSION.

DR. BURR.—Two or three points occurred to me during the reading of this excellent paper. One is in respect to the use of hyoscyamus and opium. If I understood the doctor correctly that they are made of frequent use in the care of the insane, I question the statement. They are not used frequently in my experience.

He used the expression also that the insane are the "most unfortunate of God's people." This is an expression we often hear employed, but it is not true. A woman came to me some time ago and said, "This is the most horrible affliction known to man." I said, "No; I do not wish to minimize your trouble, but you had your boy for thirty-five years; he was a comfort and help to you. If he had been born an idiot or an imbecile you would not have had his companionship for thirty-five years. The insane are not the most unfortunate of God's people."

Another thing, a vicious man becoming insane will be vicious still. The patient with high ideals will perhaps be amenable to moral suasion, but it is doubtful whether insanity ever changes the character of the vicious man for the better.

DR. HUGHES.—We should not allow that statement to go unchallenged. that the insane are the most unfortunate of God's creatures, for some people are never happy unless they are crazy; that is a scientific fact. (Laughter.) What is true of moody, agitated melancholia and maniac frenzy is not true of paresis and forms of exalted paranoia.

I have had patients that were only contented when they were insane. The parietic with his grandiose delusions and his sense of great ability and bon homme, "Never felt better in his life," he will tell you, though he could hardly be worse. The psychoses have their exaltant as well as their depressed psychic signals, their insane delusive joy as well as sorrow—their periods of pain and pleasure. The earlier stage of melancholia in parietics becomes transformed in delusions of exaltation. Why, some insane men are wealthier than Vanderbilt, or Morgan, or Rockefeller, without the latter's misery. As a matter of fact, I think for their own good and the good of the country Rockefeller and Morgan would feel better and more at ease just now in a lunatic asylum. (Laughter.)

EUROPEAN HOSPITALS FOR THE INSANE.

By J. CLEMENT CLARK, M. D.,

Superintendent, Springfield State Hospital, Sykesville, Md.

It was my pleasure last spring to visit some of the hospitals for the insane of England, Scotland, and the continent of Europe.

My leave of absence being but for two months, two weeks of which time was consumed in crossing and re-crossing the Atlantic, and the subject having been presented several times before by more able observers who have not only studied abroad, but have spent weeks where I spent days in visiting these various hospitals, I feel that an apology is due the Association in presenting this paper.

However, possibly it may not be amiss in the midst of the reading and discussion of so many able and scientific papers, to rest awhile and listen to something which will not strain your cerebral cortex or stretch your pia mater. Time will not permit a description of all the various hospitals seen, neither would it be interesting, but I will endeavor to give you as briefly as possible my impression of the construction, management, and treatment of patients as seen in some of the European hospitals for the insane.

Landing at Liverpool, I visited Rainhill Asylum, near Liverpool, from there to Manchester to the Prestwich Asylum, and the David Lewis Epileptic Colony for the treatment of sane epileptics, the distinctive feature of the latter being that the cottages, or villas, as they are called in England, were nearly all only one story high, with day room, dormitory, and dining room all on the first floor.

From Manchester, travelling north, Edinburgh, Scotland, was reached, and the Royal Edinburgh Asylum visited, where Dr. Thomas S. Clouston, known abroad as the "Grand Old Man" in psychiatry, gave me much of his time, besides showing me through his private and public wards he took me through the

laboratory, where Ford Robertson was then experimenting with the Klebs-Löffler Bacillus and its relationship to general paresis. I left Edinburgh much impressed with Dr. Clouston's enthusiasm, activity, and earnestness in his work, and wondered why so many students from America go to Germany for advanced work in psychiatry, with such a teacher using their mother-tongue.

The Royal Gartnavel Hospital and the Glasgow District Asylum at Woodilee were both visited, the first being a Royal institution, and the latter a representation of the public asylum in Scotland. It is needless to say that I was hospitably received at all the institutions in Scotland, and the cards of introduction which I was so careful to secure before leaving home were absolutely of no use to me and many of them are still in my card case.

The asylums of Scotland and England being so much alike both in construction, management, and treatment of the patients, a description of one will suffice for both. From Glasgow, travelling southward, London was reached in a day's trip. Several of the asylums in and around London were visited, including Claybury, Heath at Bexly, Horton, and Manor asylums, Colney Hatch, Old Bedlam, together with the youngest of the London county asylums, the Epileptic Colony for the insane at Ewell, near Epsom.

Regarding hospital construction, I saw very little difference from that in this country, the older hospitals being on the wing system, and the newer ones on the colony or villa system, and in this connection I hope I may be pardoned if I revert to a little history in connection with my own hospital, the Springfield State Hospital, Maryland, and at the same time give you a report of a committee appointed by the London County Council to devise plans for a new asylum, on the lines of the Maryland asylum, representing, as it does, the latest British ideas in hospital construction, in which report our large acreage and widely separated groups of buildings for 200 patients as originally planned, are unfavorably criticised, on administrative and economical grounds, both of which are well taken, our board of managers having some time ago abandoned this plan for these very reasons, and are now building all additional cottages in close proximity to the two original groups.

The following were the resolutions and report:

SPECIAL (HOUSING AND TREATMENT OF LUNATICS) SUB-COMMITTEE.

MAY 19, 1903.

Resolved, That it be referred to the asylum's engineer and Dr. Stansfield to consider and report as to erecting an asylum to accommodate 2000 patients on the Horton estate on the lines of the Maryland Asylum, and that Mr. White be asked to furnish such further information as may be required to enable this to be done.

To the Housing Sub-Committee.

GENTLEMEN.—In compliance with your instructions as contained in the above resolution, we have carefully examined the plans and the scheme on the lines of the Maryland Asylum, U. S. A., laid before you by Mr. Edward White, and, after much consideration, have formulated our report.

The proposed asylum for 2000 patients consists of a general administrative block, 10 blocks for patients, 6 cottages, a recreation hall, and a block of farm buildings, the whole to be distributed over an area of approximately 150 acres.

The distinctive features of the scheme are in the arrangement of the blocks for patients and the facilities for rapid construction. Each of the blocks is self-contained and is indeed a small asylum for 200 patients. It is made up of four separate buildings placed on the four sides of a square and connected with each other by corridors opened at the sides. The first of these buildings is three floors in height and contains the dining hall common to the other three buildings, the kitchen, the stores, the dispensary, and quarters for the medical officers and for the staff of all grades employed in the block. The basement of this building is used as a boiler house for the heating and hot water plant.

The connecting corridors have subways for the lead of pipes, electric cables, etc.

The three remaining buildings are for the patients and each accommodates sixty-seven—the day room being on the ground floor and dormitories above. All of the patients, except those on the sick list, assemble in the dining hall of the administrative building for meals.

The scheme generally as set out on the plan is in our opinion an advance upon the barrack type of asylum, so common in England, in so far as it admits of greater segregation, with all its numerous advantages; but beyond this, we are not able to speak favorably of it. That the villa principle of asylum construction is the right one we are fully convinced, but we think its success materially depends upon the villas being designed for the special type of cases they have to accommodate, and upon the suitable grouping of the villas. It is not possible to use the same arrangement of structure for all cases.

We now propose to review the Maryland plan under the following headings:

- Arrangement of buildings,
- Area occupied,
- Means of classification, and
- The probable effect upon the maintenance rate.

Arrangement of Buildings.—The Commissioners in Lunacy require that all day-rooms shall have a south or southeasterly aspect, with an uninterrupted view; this it will be seen will be impossible to provide in buildings forming the four sides of a square. It is a cardinal principle that sanitary annexes shall project from the ward by a lobby with arrangements for cross ventilation, but this is not provided for in the Maryland plans. A further feature in English asylums is that at least two attendants' rooms shall be provided in every ward adjoining the dormitories—the reason for this being apparent. At Maryland the staff accommodation is provided in a building apart from those occupied by patients, that a change of surroundings may be assured.

Area.—In the plans before us the buildings are shown scattered over the whole suggested site of 728 acres, but at a conference which we had with Mr. White, after discussion, Mr. White thought that the area allocated to the villas might be reduced to 150 acres. This area is so large that it would militate most seriously against efficient supervision by the medical superintendent and other senior officers. The formation and upkeep of roads and paths, the cost of installing the mains for water, electric light, telephones, etc., to buildings spread over so large an area, would be, we think, a serious charge. The time occupied in collecting and distributing the working patients would be necessarily so great as to materially reduce the value of their labor. The disadvantages of escorting over great lengths of road the patients to the evening entertainments, church, etc., could only be overcome by having the road efficiently lighted—a costly matter.

In our opinion the buildings of a villa asylum might be grouped on seventy-five acres.

Classification.—The type of structure here suggested most nearly approaches that which we have in use for quiet chronic patients, and does not lend itself to the housing and treatment of either infirm, acutely refractory, or of those patients requiring hospital treatment. At the Maryland asylum, where the type of buildings now under consideration are in operation, a medical officer is allotted to each block and resides there, with the result that the staff of medical officers is in the ratio of 1 to 200 patients; so that if the system was adopted at an asylum for 2000 patients it would mean that ten assistant medical officers would have to be employed. The work which devolves upon an assistant medical officer depends entirely upon the class of patients under his charge. One assistant medical officer is very fully occupied with the care and treatment of 100 recent and acute patients, whereas he could equally well look after five or six hundred of the quiet chronic class. The statutory work which a medical officer has to carry out in connection with a recent and recoverable case during the first four months of a patient's residence, apart from the question of the time occupied in treating the case—due to a procedure peculiar to this country—is fully ten times that in connection with a quiet chronic case.

Maintenance.—The additional medical assistants, which we have pointed out would be necessary to carry out this scheme, would mean an additional charge on the maintenance of approximately £1500 per annum.

Owing to the wide separation of the blocks and the difficulties which would result therefrom in obtaining assistance quickly in cases of emergency, it would be necessary to increase the ratio of attendants and nurses to patients above that which usually obtains at present with us.

The policy of providing in each of the blocks a staff to cook for 200 patients with their complement of officers, sub-officers, attendants, and servants, as against the preparation and distribution of food from a central kitchen is one that effects so many other questions and is so largely associated with the cost of maintenance that some attention must be given to it. The members of the staff employed in our central kitchens are, with the exception of the cook and assistant cook, not competent to prepare food for the table, and are paid in relation to their duties. Two cooks form, therefore, the full trained culinary staff in one of our large asylums, the whole kitchen staff being one cook, one assistant cook, four kitchen maids, and three scullerymen. If the local cooking arrangements were in operation, one cook and one kitchen maid, with reliefs, would be the least number that could be employed per block, and the total required would be twelve cooks and twelve kitchen maids.

In a villa system with buildings accommodating from fifty to sixty patients certain of the villas could be conducted on the family principle with success, a system to be highly commended, but in our opinion, which is supported by the experience of one of us, the system is limited by the above numbers.

Finally the question of up-keep and maintenance of fabric and plant has to be considered, and the cost of repairs which may be somewhat greater in a villa system than in those of our present type, would be affected considerably by the buildings being widely spread, as so much time would be taken up in journeys between the depot and the detached houses.

(Sgd.) T. E. K. STANSFIELD,

Medical Superintendent, Bexley Asylum.

(Sgd.) WM. CHAS. CLIFFORD SMITH,

Asylum's Engineer.

While these criticisms regarding arrangements of buildings and the probable effect on the maintenance rate are good, that concerning acreage will not hold in this country, where an acre per patient is the generally accepted rule. It must be remembered, however, that England is a populous country and land is very high. It will be seen by the original resolution as adopted by the London County Council that the proposed asylum is for 2000 patients, yet the commissioners in lunacy in their last annual report to the Lord Chancellor say:

"We are unable to view without grave concern the modern tendency to undue increase in the size of asylums for the insane poor, and we think that the time has arrived when we should renew our protest against it." The commission states that the statistics do not show that the large asylums are more economical and give figures to prove to the contrary, and that tuberculosis and asylum dysentery are much more prevalent in the large asylums. They also state that an asylum with 800 beds is large enough, adding that "We have never failed to recognize the serious financial burden which the continually increasing accumulation of the insane poor is imposing upon the community, but justice and economy alike demand that the means which are provided to reinstate in health of mind and body those of the industrial classes who fall by the way, should be those which are best calculated to secure the result in the speediest and most effectual manner, and this we believe to be hindered by the undue growth of asylums."

Management.—The asylums in England and Scotland are under the supervision of a lunacy commission, with the immediate control by a committee of the various county councils corresponding to our State legislatures. The council committee makes all appointments. The superintendent can only suspend an inefficient employe and await the action of the committee, a dangerous division of authority. Salaries and wages with the exception of medical officers are much lower than in America, but a system of pensioning after a certain number of years of faithful service is in vogue.

Many of the county and borough asylums receive private patients, patients being located, as to rooms, in accordance with the amount paid and being divided into three classes in most of the asylums—not a bad system, as friends and patients are thus encouraged to pay what they can in order to get the best accommodations. The cost of maintenance is not so much as in America, being on the average of 10 shillings per week, or \$2.50, but the patients are not quite as well fed or as well clothed as in this country, and besides, the cost of most supplies is less than with us. Supplies are given out by contract by competitive bidding.

Treatment.—Regarding the treatment and care of patients, both are good, and I saw very little difference from the methods employed at home. The hospitals were all well kept and a high standard of nursing maintained. I saw more evidence of restraint, however, and less employment of patients, padded cells, and shuttered rooms, being much in evidence at most of the asylums. The medical officers seemed to be very much in fear of the press as regards escapes and suicides, and patients are therefore more strictly confined. A coroner's inquest is held in case of suicide, and employees who abuse a patient are brought before a magistrate. The same diseases prevail, epidemic dysentery often, typhoid occasionally, tuberculosis in about the same ratio as elsewhere.

THE GERMAN ASYLUMS

While only a small per cent of the German asylums were visited, those seen were of a representative type. They included the Psychopathic Hospital at Berlin, the Berlin City Asylum at Herzberge, the Dalldorf Asylum, the Asylum for Epileptics at Wuhlgarten, the Provincial Asylum at Alt-Scherbitz, Saxony, the Psychopathic Hospital at Munich, the newest asylum in the province of Bavaria at Haar, just completed, and the receiving ward for cases of mental diseases in connection with the Nuremberg General Hospital.

Regarding hospital construction in Germany, while the buildings generally were well built and substantially too, they were plain and of less architectural beauty than those of England or Scotland, or as are now built in this country. All of the new asylums are on the cottage or pavillion system, and even where the older ones are enlarged, it is with a detached cottage, the cottages being "closed," "half-closed," or "open or free," according to the type of case occupying them.

The asylums were plainly furnished in an old-fashioned style, very little effort seemingly being made for interior adornment of the wards and cottages, though much was done in the matter of landscape gardening at all the new asylums. The Provincial Asylum in Saxony, at Alt-Scherbitz, was particularly attractive from this point of view, each of the cottages being separated from

its neighbor by ornamental trees, shrubbery, ivy, and other climbing plants, so that the colony looked like one of our suburban villages.

The older asylums are built of pressed brick, the newer ones being plastered outside with cement, which gives them a grayish-white appearance, and are gabled after the old German style.

The Psychopathic Hospital at Munich, under the direction of Prof. Emil Kraepelin, is undoubtedly the most modern and up-to-date hospital in the world of its kind, whether judged from its opportunities afforded for scientific research into all questions connected with insanity or the actual treatment of patients. The first floor contains rooms for examination of new patients, out-of-door department or dispensary and a large amphitheater for the accommodation of 240 students. On the second floor besides the wards are rooms for the medical library, for anatomical investigation and for psychological and physiological studies of the brain processes. The wards are large, well ventilated and have all the modern arrangements for comfort and convenience in the treatment of patients. In different parts of the building were rooms for micro photography and for making the various examinations with scientific instruments of precision. Here I saw instruments for testing reflexes, for measuring the duration of mental processes and the dilation of the pupil of the eyes to light, and a new and interesting one for measuring the reaction of the pupil to smell, sound and other forms of stimulation, besides rooms in which were the usual laboratory equipment.

Regarding management and control, it is governmental and partakes of the military. The medical director is in supreme command, no divided service. He can hold patients at will, pending examination by committee appointed by court, there being a marked tendency in Germany to facilitate the admission of patients in the Psychopathic Hospital for early treatment. The public asylums receive private patients, and they are divided into two classes, at two fixed rates of payment. The per capita cost is about 500 marks per annum, or about \$125, but patients are not as well fed or clothed as with us, and the nursing staff is underpaid and not on as high a plane as in America.

Regarding treatment and care of patients, methods are somewhat different than with us. Bed treatment is popular. Prolonged baths, also, many patients were asleep in water. Consequently, patients are more confined, less out-of-door employment given, and also less liberty, which was largely shown in their anæmic appearance.

Patients are looked upon in a different light in Germany, particularly in the public asylums. There are so many clinics that patients are carefully studied, possibly not so much as to a cure as what material he will furnish for a clinic. This, however, leads to a careful scientific study of the cases from every point of view, and leads to painstaking investigations, in which are brought to use all the finer methods of making examinations, in which we will have to admit the Germans excel.

GHEEL COLONY.

This famous colony, where over 1880 patients are boarded out with the villagers and farmers, was next visited. So much has been written about the system in vogue here, both by medical and lay writers, that further description might seem superfluous, but to those interested in the treatment and care of the insane, the system and methods at Gheel must always be interesting. That so many of the insane can be successfully treated and cared for seems truly wonderful to one who has not visited the place, but when it is known that only mild cases, idiots, and imbeciles are mostly treated, and the custom and habits of the people with whom the patients are boarded are known, it can be readily understood why it is successful at Gheel. There is a central asylum for 150 patients in the suburbs of Gheel, which is a city of about 15,000 inhabitants. This asylum has three wings, one an observation department for recent cases, one for the sick, one for violent cases or those who have committed some dangerous act.

It is a very old building, built of brick, but was very well kept. Padded rooms and bars were much in evidence, especially in the acute section.

The superintendent and assistant physicians are all quartered in the central asylum, and here all cases are first received, and from thence drafted to the care of the registered "hosts." If a

patient shows a dangerous tendency, is suicidal, or likely to escape, he is sent to one of the closed asylums in Belgium, of which there are two. In addition to six assistant physicians, there are seven lay inspectors who visit every house in which patients are kept regularly, and a system of written reports is in vogue, which keeps the medical officers very well posted of the condition of patients.

I visited with Dr. Peters, the superintendent, some of the farm-houses where the patients boarded, and was much impressed with the simple life of the people. The size of the patients' rooms, the ventilation, bedding, clothing, and cleanliness of the rooms are all regulated by law, and certainly the rooms seen, seemed as good or even better than those of the "host," and the life led by the patients in the homes visited seemed exactly like that of the people with whom they lived. They eat the same food at the same table, and take part, if they are fit, in the household or out-of-door vocations of their hosts.

While the occupants of some of the humble homes visited were peasants of the poorer class, I was impressed with the honest kindness of their ruddy faces and the evident interest they took in their boarders.

At a typical farmhouse—one story with thatched roof—in one end were two rooms of regulation size for patients, a large day room and kitchen, and in the other a small passageway and six nice-looking, well-kept Alderney milch cows. The patients were called in from their work for our inspection, and all seemed like a happy family. At all the homes visited a book is kept in which is the amount of clothing furnished the patient, signed by the superintendent; also the amount of money received for keep of patient. The payment for patients is regulated by the superintendent, and is in accordance with the trouble, uncleanness, and ability of the patient to do manual labor, and is from fifty to one hundred centimes a day, or ten to twenty cents. This seems very low, but it must be remembered that the mode of living is extremely primitive. Outside the village, the inhabitants are farmers on a small scale. The living room of the house generally has a brick or hard clay floor, with very cheap furniture, and this room is kitchen, dining room, and sometimes bedroom for the

family—the patient always having a separate room. If the patient can do work, the profit goes to his host, but the latter is expected to provide some extras in the shape of tobacco, beer, etc. As a rule, but one patient is allowed to a family.

Altogether, it was a remarkable system, originating from a legendary foundation by a gradual evolution to its present enormous proportion, and is successful in its own sphere, in a religious community among people who truly lead the simple life and who seem to care for the patients from a sense of religious duty rather than for profit. Their fathers did it before them, regarding it as a mark of confidence and esteem by the government. It is doubtful if there is another community in the whole world where such a system could be so successfully carried out as at Gheel.

MUSINGS CONCERNING NURSES IN HOSPITALS FOR THE INSANE.

By W. P. CRUMBACKER, M. D.,
Superintendent Independence State Hospital.

In order properly to care for the insane members of our population, it is essential that they be fed, clothed, housed, given suitable medical attention and carefully nursed, under which term in its broadest and most comprehensive sense, we include the furnishing of desirable employment, the provision of timely recreation and the supplying of sympathetic companionship. The above enumerated requisites are for the most part regarded as being indispensable in making provision for the proper care and treatment of the insane.

None of these essential requirements appear to us more urgently necessary, if we are to provide even moderately desirable care for our insane wards, than the last mentioned one, viz., nursing. Certainly no other necessary agency is so difficult to institute. Consequently I have determined, in this paper, to present an outline of the methods in vogue for the training of nurses, the imparting of knowledge to them, and a description of the manner in which their services are performed, at the Independence State Hospital, Iowa.

Doubtless every superintendent of a State hospital is compelled to bestow on this subject a great deal of careful and earnest consideration. I cherish the hope that an expression of some of my own cogitations over the matter may prove useful and interesting to other members of this association, and that the discussion and mutual interchange of views and statements of individual opinion, which I trust this paper will evoke, may broaden our conception and add to our accumulation of knowledge on this very important topic.

As a means suited to the attainment of an object—the development of a desirable class of attendants, the training school for

nurses, has been established in all of our State hospitals where the officials make any pretension to the enactment of progressive work. In so far as I have been able to ascertain, the first training school for nurses connected with an institution for insane in America, was inaugurated in 1882 at Waverly, Massachusetts, in the McLean hospital, under the superintendency of Dr. Edward M. Cowles.

In Iowa there is a training school in connection with each of the four State hospitals for the insane, and there is also one at the institution for feeble-minded children. At Independence the session usually opens on the last Monday in September and draws to an end with the closing week of the following May. During this term each physician officially connected with the hospital devotes at least one hour every week to his class, lecturing and quizzing on the special topics assigned to him. In addition to this didactic work, practical demonstration and instruction is afforded the pupils in the wards. Here the senior members of the nursing corps as well as the physicians comprising the staff, engage in teaching the science and art of house-cleaning, bed-making, attention to details in the matter of caring for the ordinary insane patients and the thousand and one items the nurse finds included in her duties, besides the actual medical and surgical nursing of bed-ridden cases.

In the Iowa institutions, the complete course of training for the nurses comprises three years of practical work and study; but those who pass the requisite examinations, at the completion of the second year's course, receive certificates as graduate attendants. This certificate entitles the holder to increased remuneration. At Independence the graduate attendant's salary is never below \$25.00 a month if she is caring for female patients; nor less than \$30.00 a month if she is on the wards for males.

At the end of the third year the candidate who passes the prescribed examination receives a certificate as graduate nurse. At the hospital for the Northeastern Iowa district we require the attendants to go to the lectures and to receive the practical instruction provided for the third year's course; yet we have issued no certificates to our pupils as graduate nurses. The course assigned implies that before a certificate as graduate nurse is

awarded, the candidate shall have become proficient in administering massage. Unfortunately, up to the present time, we have been unable to institute anything save the most rudimentary practical instruction in this useful method of treating mental and neurological patients. We have, therefore, deemed it inadvisable to bestow the diploma on any of our third year scholars.

The list of text-books that has been adopted for use in the training schools at the Iowa State hospitals, comprises the following:

Kimber's Anatomy and Physiology, Groff's *Materia Medica*, Warwick and Tunstall's *First Aid to the Injured and Sick*, Weeks-Shaw's *Nursing*, Wharton's *Minor Surgery*, Burr's *Psychology and Mental Diseases*, Boland's *Invalid Cooking*, Kellogg's *Art of Massage*, Kellogg's *Hydrotherapy*.

These books are provided by the hospital free of charge to the students. In case they wish to purchase the books outright, they may do so at cost. The above list was adopted in 1902 by the superintendents of the five institutions maintaining training schools, and approved by the Board of Control of State institutions. The list was proposed by the superintendent of the Clarinda State Hospital.

At Independence, all of the attendants in the service when the training school opens in the fall, who have not already received instruction, are required to enter the first year's class. Those who pass the final examination, by not less than seventy-five per cent, one hundred being considered perfect, are promoted to the second year's class. An examination is conducted at the end of the school year for the second and third-year pupils. The questions are prepared by the five superintendents concerned with the schools, under the direction of the board of control. This arrangement secures uniformity in the examinations for the Iowa schools.

Four questions for each of the three classes are prepared under the direction of the chief executive officer of each of the five institutions. This makes an aggregate of twelve questions originated at each institution; a total of sixty—twenty queries to be submitted to the members of each of the three classes as a final test of the year's work. With us, all of the members of the medical staff are invited to participate in the work of framing our quota of the questions.

During the first year the didactic work for the most part comprises the teaching of anatomy, physiology, materia medica and therapeutics. In the second year, instruction is given in the practical nursing of somatic diseases and in the elementary principles of normal and morbid psychology. The third year pupils are more especially instructed in surgical work and technique, the culinary art and other useful knowledge subsidiary to the profession of nursing. Practical instruction calculated to develop tact and efficiency in caring for the insane is imparted to the pupils daily in the wards. We attempt so to arrange matters that every pupil will devote at least three months to actual nursing of those physically ill, prior to receiving the diploma.

Fifteen annual commencements have been held in connection with the hospital training school at Independence. Certificates have been awarded to 140 women and 61 men, a total of 201. At the recent graduating exercises held May 23, 1906, certificates were issued to 20 pupils, three men and seventeen women.

Many of our nurses who engage in the hospital service are actuated more by a desire to receive the training and instruction than by the offer of wages. Therefore, the services of a class of attendants endowed with greater refinement, enriched with more culture and possessed of more energetic spirit are acquired for our nursing corps than we could hope to enlist if the school were not associated with the institution. Many of our nurses, notwithstanding the increased remuneration graduates receive, sever their connection with the hospital soon after the diploma is conferred. Their services are eagerly sought after by physicians in private sanitariums, for nursing the sick in private families and by surgeons for their assistance in the care of patients subsequent to operations. The remuneration received by our graduates engaged in private work, in no instance falls below the minimum rate of \$15.00 per week, with an additional allowance, sufficient for all reasonable traveling and living expenses, granted.

While the primary object of instituting and maintaining our training schools is the desire to promote greater efficiency in the care of our insane patients and to improve the administration of hospital affairs in all departments, yet we feel that incidentally the training schools of the Iowa institutions have proved a boon

to the general public. They supply to a certain extent the demand for the trained nurse who has become an integral factor in our social fabric, the call for whom increases with the ever extending education on the part of the general populace.

Female Nurses for Male Patients.—To my mind, one of the most important movements in the direction of progress is being effected by the elimination to a considerable extent of the male attendant and the substitution in his stead of women to carry on the nursing and otherwise direct the course of affairs in the wards for male patients. It must be unmistakably apparent to even the casual observer and to the merest tyro engaged in supervising the workings of an institution for insane, that under the old method of employing only men to care for the male patients, the results attained proved vastly more satisfactory in the women's division than in the department of the hospital reserved for men. The housekeeping was more punctually and effectually executed; the floors were kept in better condition; the walls and ceilings of corridors, side rooms, and dormitories presented all the evidence of the more frequent and more extensive application of elbow grease; pictures, window curtains, drapery and fancy work of every description were more plentifully provided and their arrangement was so tastefully effected as to result in more artistic harmony of design; the dining-rooms more nearly approached the immaculate in their manifestations of care; the lavatories, bath rooms, and water closets showed more constant and watchful supervision. In the female wards the patients themselves were more cleanly and more neatly attired; the rooms set apart for clothing and linen and the details of attention to the laundering were all arranged more systematically and carried out in a more accurate manner; abuses, such as evidences that the patients had been subjected to physical torture and harsh disciplinary measures at the hands of the attendants, were less frequently encountered and when detected were far less serious in severity.

There are none among us, possessing any considerable fund of experience in the matter of caring for insane patients, but have observed, when visiting other institutions similar in character and scope to those in which we were engaged, that there was a vast difference in appearance and conduct of affairs between the two

departments, and this divergence invariably reflected the higher degree of credit on the management of the women's wards. Even so, at the institutions of which we were in charge, whenever we entered on a tour of inspection accompanied by distinguished visitors on whom we were particularly desirous of producing a favorable impression, we complied with the sentiment enunciated in the whilom maxim, "Put your best foot foremost," by wending our course through paths that straightway led into the corridors and cottages where female patients were domiciled; reserving our visit to the male wards until later. If our guests could find time to visit only a part of the institution, we so planned as to spend their time in observing the female rather than the male wards. And all this notwithstanding the uniform testimony to the effect that female patients are in themselves more difficult to manage and pacify than the corresponding type of male insane.

Time and again have I wished for the systematic arrangement of work, the faithful co-operation and the genuine sympathy with the patients in the wards for male inmates that we observed on our corridors for women. Is it strange then, that through all these years, we have constantly had in mind the advisability of introducing feminine influences among our insane men?

If we take a comprehensive survey of the influences and agencies directed toward the care of the insane in an effort to discover precedents for establishing our cherished methods of procedure, we find that the female nurse is extensively engaged in caring for the male insane in many parts of Europe as well as in America.

In the first place we are informed that the members of some of the religious orders have for years, in various localities, relied on female nurses even to the extent of almost entirely excluding the male attendants from the wards for insane men.

In many of the public asylums of Europe this system of, to a great extent, eliminating male attendants from the wards has been extensively practiced. One of the most noteworthy instances of this kind with which we are familiar is afforded in the management of the asylum at Meerenberg near Haarlem in Holland. This institution is reputed to provide accommodation for something in excess of 1300 patients of whom about one-half are

males. The medical superintendent, Dr. van Deventer, was at one time at the head of one of the largest general hospitals in Amsterdam, Holland. He received his present appointment about fourteen years ago, and in organizing his service, he endeavored to establish and maintain the care of his patients as nearly as possible on a level with the nursing and attention administered in a hospital for general diseases.

The fact that Dr. van Deventer was a fresh recruit from the general hospital at the time he inaugurated a system that we conceive constitutes an essential reformation in the organization of the nursing staff, reminds us again of the improvements instituted by the one of our members who resigned from the superintendency of the hospital at Waverly hard by a few years ago. This distinguished American co-worker made marked advances in the matter of perfecting the nursing service and by reason of his light having so shone that all might see it, the quality of nursing in institutions for the insane throughout the Western continent at least has been elevated. He also came from the ranks of general hospital work into this as a new field of labor where the example of his enthusiasm and devotion has reflected so much credit. These observations would indicate that an admixture of energy introduced into our own more exclusive domain of hospital life from the other subdivisions of this field of labor will prove beneficial.

The present organization of the nursing staff on the male side of the institution at Meerenberg comprises 57 females and 46 males. The ward for idiots is entirely in charge of women. Two wards intended for the disturbed and violent patients and affording accommodation for approximately one-sixth of the whole male population have male nurses only though they are under the direction of the head nurses (female) of their respective divisions. In the remaining wards the nursing corps is composed of both males and females, the latter constituting the preponderance when considered from the view-point of either enumeration or responsibility.

The Wilhelmina Hospital in Amsterdam furnishes another example of a Dutch asylum in which the nursing of the entire male population is under feminine supervision and more than half of the members of the nursing corps for the male wards are females.

In many of the Scottish asylums most of the nursing and attendance on the male patients is effected by female employees. This statement is true to a noteworthy degree in the Fife asylum under the superintendency of Dr. A. R. Turnbull; also at the Stirling district asylum under the management of Dr. G. M. Robertson. At the royal asylum near Glasgow the system of female nursing in male wards is to a considerable extent in vogue and the medical superintendent, Dr. L. R. Oswald, in commenting upon it says: "It is a fact that epileptic and other irritable patients are more easily soothed—there are fewer outbursts of excitement and fewer trivial accidents happening—when you have these patients nursed by women."

In England, too, the practice of employing women for the care of deranged males has elicited favorable consideration. The superintendent of the asylum for the city of London, Dr. E. W. White, who is also professor of psychological medicine at King's college in that city, says: "The sick are far better looked after than they were before in those little attentions in regard to which women are so needful. The comforts of the bed are so much increased, and the various little attentions in sick nursing, which can never be done by a man, are properly carried out by female nurses."

Dr. C. S. Morrison, superintendent of the asylum at Burghill, England, after an experience with the system, extending over a period of eighteen months, comments concerning a ward where only females are employed, as follows: "Cases of melancholia, long since classified among the chronic unrecoverable cases, after being placed in this ward, not only showed a marked improvement in their mental condition, but half their number have been discharged recovered. . . . Of course, we do not expect acute homicidal cases, or the class of men who are given to exposing their persons, to be exactly a suitable class to place under female care, but if you exclude such classes I am of opinion that every other class of cases can be advantageously placed under female nurses."

Many of the foregoing comments were evoked by a paper read by Dr. Turnbull, at the meeting of the British Medico-Psychological Association, in London, in July, 1903. We would refer

those who may be particularly interested in this subject to the paper and the discussion elicited by it as reported in the *Journal of Mental Science* for October, 1903. In the course of his article Dr. Turnbull gives utterance to the following commendatory expression of his sympathy with the method under consideration: "The difficulties which one looks for in dealing in this way with male insane patients have vanished when put to the test of actual practice; the care of the patients has been greatly improved; the patients as a rule appreciate what is done for them, and submit readily to be guided by the nurses; and the nurses take readily to the work and find pleasure in it—and, indeed, they often say that the male sick room is more easily managed than any of the wards on the female side. It accentuates the feeling that there is real nursing to be done in asylum duty."

Dr. George M. Robertson, of the Stirling district asylum, following an extensive experience in the matter, stamps it with his approval in the following language: "The system of female nursing of men has now been adopted by the great majority of superintendents in Scotland; it has the strong support of H. M. Commissioners in Lunacy in Scotland; and it has proved in the practice of those who have adopted it an undoubted success. That the system, for good or for evil, has come to stay is not now doubted by any responsible person in Scotland that I know of. Its universal adoption is regarded as a mere matter of time. It obviously must be accorded great merit, from a consideration of these facts alone." (Vide the *Journal of Mental Science*, January, 1905, page 231.)

In American institutions for the insane, the system of providing female nurses for male patients has not yet gained as sure a footing as on the continent and in Scotland. Nevertheless, it is gradually being introduced and its operations have extended to various hospitals located throughout the States and the Dominion. Indeed, there are few hospitals now the officials of which make any pretension to keeping abreast of the times that have not made some use of the female as a nurse for insane males. In the government hospital at Washington, D. C., under the progressive administration of our late fellow-member, Dr. A. B. Richardson, a somewhat extensive use of women nurses in the

male wards was inaugurated. Concerning the subject in 1902 he wrote: "There has been a very decided change for the better in these wards. There is an increased appearance of neatness of both patients and beds, there are less frequent complaints and a greater degree of contentment among the patients. . . . It also increases the confidence of the friends of the patients."

In the hospital at Independence, the whole number of attendants, counting nurses as attendants, actually employed in the wards for male patients is 44. Of this total 17 are males and 27 are females. The male inmates aggregate in round numbers 600. In the male wards there are 34 attendants on duty during the day, of whom 12 are males and 22 are females. The night force of attendants in the wards for male patients numbers 10—five males and five females.

It may be well by way of explanation to state that with us the department for male patients comprises two subdivisions: (1) The six wards, providing accommodations for about 200 patients, in which the acute and presumably curable cases are detained; (2) The three wards and two detached cottages, in which about 400 patients are domiciled, and to which no one is at all likely to be transferred until the incurability of his psychiatric malady is pretty definitely established.

In the first group—the six wards that comprise the acute service—all the day attendants are women save those assigned to one ward. In the latter corridor about 40 of the most disturbed inmates and of those who are most persistent in their efforts to escape, are detained. This ward is entirely under masculine surveillance both by day and by night.

Another ward in the group intended for the acute service is recognized as the admission ward. Every male patient admitted to the hospital makes his *début* on this ward. Here he receives his first bath and is relegated to bed where he is expected to remain until a thorough examination of his physical, and a searching inquiry into his mental condition has been effected. Every patient when first admitted to the hospital, or when returned from parole or escape is detained in this ward at least twenty-four hours; and those ill of acute somatic diseases or bed-ridden as a result of chronic physical infirmities arising while they are classed

with the acute insane are remanded to this ward for care and treatment. The regular nursing corps of the admission ward comprises six attendants of whom four—all women—are on duty during the day and two, a man and his wife, are on duty at night. When an acutely maniacal or a wildly delirious patient is received it is surprising to note how he will remain quietly in bed and observe the rules of decorum, propriety and decency in the presence of the female nurses; refraining from the expression of profane language, forbearing to utter obscene speech and proving tractable under their tactful and sympathetic supervision. Bear in mind that I do not state that every intensely delirious patient will refrain from boisterousness and belligerence in the absence of manual restraint, under the gentle guidance of the female attendant; but the proportion of instances in which such a felicitous solution of this very difficult problem will materialize is simply astonishing. Whenever a patient in the admission ward proves the victim of a very violent, maniacal attack, or one of the more chronic cases undergoes an acutely frenzied exacerbation, a reasonable attempt is made by the female attendants to quiet and control him. If this effort proves unsuccessful and there appears to be no other alternative but that of overcoming the turbulence by muscular power, one or more male attendants are as a matter of course summoned into requisition for the time being.

In the remaining four wards that complete the acute service, no male attendants are stationed during the day, but the two halls in which the intermediate class of patients is detained are under the care of a male attendant at night, and the two corridors to which the most trustworthy cases are assigned are under feminine direction during the nocturnal watches.

Now, permit us to direct your attention to the other subdivision, that portion of the institution reserved for the chronic and presumably incurable insane males. Here, as in the acute service, is one ward furnishing room for the accommodation of about 40 of those patients who are most turbulent and of those who are exceedingly persistent in the manifestation of their desire to escape. This ward is entirely in charge of male attendants both day and night. The rest of the chronic service is in charge of women in day time and nearly all is similarly governed during the night.

One detached cottage, (Grove Hall), in which about 140 male patients of the most profoundly demented type are domiciled and in which there are to be found continually anywhere from twenty to forty patients confined to bed on account of physical as well as mental incapacity, requires ten attendants. Of these, eight are on day duty and two are employed at night. They are all females save one. This man's duties are performed during the day, but he rooms in the cottage. The only other employees at this cottage are one or two cooks and the one male attendant already mentioned, is the only man engaged in or about this building.

At another building, a detached cottage known as Farmer's Lodge, where about 140 men who are nearly all in good somatic condition and considered faithful and effectual workers are housed, five attendants and one or two cooks are employed. All the employees at this building are women except one attendant who is on duty during the day. These men sleep in two large dormitories occupying the second floor of the building. These dormitories are connected by sliding doors that are never closed and the entire space of the upper story, with the exception of a few rooms for employees and one or two single rooms for patients who may suddenly be taken sick or become disturbed, is therefore practically one large sleeping apartment.

During the night one attendant, a woman, remains on duty with these patients, but all those employed at the cottage including the male attendant room in this building.

There are about 80 male patients remaining to account for and these occupy two wards. They are cared for by three female attendants during the day and by one male attendant during the night.

To recapitulate: Out of a male insane population of approximately 600 at Independence about 80 are cared for entirely by male attendants. The remaining 520 are cared for practically entirely during the day by female attendants, except while engaged in the fields or in the industrial departments, there being only two men assigned to ward duty with them. At night these 520 patients are in charge of five female and three male attendants.

It may be possible to present some suggestions that will prove

useful to those who have not as yet made trial of the methods under consideration and who may contemplate doing so. In the first place it does not appear advisable to supply very many positions previously filled by male attendants with women nurses at one time. At Independence no one has ever been removed for the specific purpose of making room for the employment of a woman in his stead. Females have only been installed in these wards as vacancies occurred in our corps of attendants by means of the voluntary resignation on the part of the male employees and in a few instances when it has been deemed advisable for other good and sufficient reasons to dispense with their services. When on our own part it was definitely determined to make a trial of the female nurse in the wards for male patients two women were detailed for duty during the day only, with the sick in the hospital department for the chronic insane. The number of bed-ridden patients in this division varies, as previously stated, between 20 and 40. Formerly three men had been assigned the special task of taking care of them in day time.

At first it was thought best to retain one male attendant with the two female nurses who thus began to blaze their way through the virgin forest of this (in our locality) unexplored territory. So their work was initiated in the department where there exists the greatest opportunity for acting along the lines most similar to those required in a general hospital. In this cottage the urgent demand for improvement in the conditions was most apparent. The necessity for greater attention to the details in caring for the patients, in looking after their clothing, in providing and changing their bedding, in preparing and administering their food, in short, the institution of such cleanliness and nursing as good hygienic conditions require, was very obvious. Among this class of deeply demented patients it was also assumed that the anticipated difficulties from physical encounters with them were least likely to arise. Expanding from this beginning as a germinant nucleus, the entire system of male wards has to the extent already described been gradually but surely invaded by the magic touch of the female nurse. However, no female employee engaged elsewhere in the institution has been ordered to report for duty in the male service unless information had previously been

obtained showing that the transfer would prove to her liking; nor has a female nurse not already in the service of the institution ever been employed and then assigned to duty with the male patients, unless there had previously been a distinct understanding that she was engaged for that particular division of the service.

The number of female nurses placed in male wards has at no time been increased to the extent of more than two persons in any one month and the average augmentation has not exceeded one a month.

When the female had assumed the entire management of the cottage for demented, untidy and bed-ridden patients, the next advancement consisted in placing the admission ward under feminine supervision. This ward, as previously stated, in addition to harboring the recently admitted patients, provided accommodation for those who may have become afflicted with physical sickness while under observation in the acute service. When the system appeared to have taken deep root in these two departments and to have developed into a thrifty plant, its growth was encouraged and gradually extended along the lines that seemed to present the least resistance.

The effect of the association of the patients with women, has been marked by as decided an improvement in their bearing and deportment as is observed to contrast the conduct of the soldier when away from all of the ennobling influences of home and civilization on the one hand, and when the environment permits him to mingle with refined and cultured feminine society, on the other; or by as great a degree of elevation in the character of actions as is noticed among schoolboys while in institutions of learning where the sexes are associated when compared with the same youths while in schools at which segregation of the sexes is a dominant feature of the discipline. The entire environment of the ward invaded by the female nurse assumes an atmosphere of difference marked by way of the upward spiral and reflects so forcibly the influence of what Dr. George M. Robertson so aptly refers to as "the mothering instinct in women."

One thought in connection with the subject that has been plainly demonstrated in our experience is the unadvisability, as a general rule, of assigning male attendants and female nurses to

work together in the same ward. In order to realize the fullest measure of success from this system, it is essential that the nurses may possess no more sense of hesitation, backwardness and prudery in their dealings with the insane male patients than a mother manifests when associating with her children in the nursery. Modest, refined and cultured women who are actuated by the purest and most desirable of motives may be found willing to devote their energy to the welfare of insane men. They may be depended on for cleansing, dressing, bathing, catheterizing, administering enemas, etc., provided they are given charge of the work alone. But they do object to nursing and bathing these patients when placed in association with or subjected to the observation of male employees; and it will at once appear obvious that their taking exception to the performance of such duties while under the latter environment might be expected.

In order to counteract this objection to the association of male and female employees engaged in nursing and otherwise taking care of insane men, it is frequently and very naturally proposed to place a man and his wife together in charge of a ward. As a rule, to be complied with in the ordinary course of events, such a method of procedure deserves very strong condemnation. Our work with the insane began twenty-two years ago. The management of the institution with which we were connected shortly afterward employed two married couples, each of two male wards being placed under the supervision of a husband and wife. Although this arrangement was continued for a period of more than three years, it was at the end of that time abolished under the assumption that it was undesirable and not worthy of further perpetuation. There is ever foundation for objection on the ground that one of a pair will prove desirable while the other turns out untrustworthy. This difficulty, however, is not assigned as the principal objection to detailing husband and wife together as nurses for the insane. An unquestionable sentiment, in opposition to women nursing insane men, on the false ground that it is imprudent, permeates the various localities throughout the middle West. The husband imbibes and shares this prejudice to such an extent that when placed in the ward with his wife, the feeling will be reflected in an endeavor to prevent her from en-

gaging in real nursing and bathing patients, thereby obstructing the progress of the very cause his presence is expected to promote. Several married couples are employed at Independence, but the rule is that husband and wife are not engaged in the same wards. When the employment of women to nurse deranged men has become general as an appeal to time will most assuredly render it, this prejudice in the form of a pseudo-affectation of modesty will gradually subside and eventually entirely disappear. Then the enlistment of husband and wife to co-operate in the nursing of insane will not prove adverse on the premises herein maintained. Indeed, a very perceptible amelioration regarding this particular prejudice is already apparent at Independence and the cause of doubt urged against placing a married couple together in charge of a ward would not prove so clearly tenable there now, as it would have appeared a year or two ago.

With us, the female nurses take their male patients out of doors for their daily walks and other recreation. When the weather is clement enough to remain out the women stay with them, frustrating their efforts to escape and giving them the same care and attention that they would bestow on them while in the wards. When a male patient manifests a very great determination to escape, it may become necessary to send him out in charge of male attendants; but with several hundred male patients going out for their daily walk in charge of women only, elopements are as a matter of fact very infrequent occurrences. Many a patient will desist from his efforts to escape when the nurse interrogates him as to his willingness to run away and by such a course of action cause the superintendent to discharge her. One or more female nurses frequently accompany all the occupants of a male ward to the gardens for the purpose of supervising and aiding them in such labors as gathering berries, picking peas, harvesting beans or other similar light work. However, the patients' work on the farm, in the industrial buildings, as well as the bulk of labor in the gardens and about the pleasure grounds, is prosecuted by them while in charge of male employees; the latter going for them to the various wards after breakfast and again subsequently to the noon-day repast and returning them to the care of the female nurses in time for supper. The female nurses do the shaving, hair-cutting and bathing required by their patients.

It has sometimes been suggested by brother superintendents that it would be impossible to maintain an effective organization for contending with the ravages of fire if the force of male attendants should be abridged. However, by enlisting the services of the men employed in the offices, the engineering and other industrial departments, a corps comprising about twenty-five men has at all times been mustered for the weekly drill of the fire department.

Others have expressed apprehension that it would prove difficult or impossible to support an adequate musical organization in the event of the number of male attendants being to any considerable degree curtailed. In some institutions the solution of this problem has been effected by encouraging the female nurses to participate in the musical entertainments. With us, the female employees have not united with the brass band. But here again the services of the males employed outside of the wards have been summoned into requisition, "the butcher, the baker and the candlestick maker" all contributing their musical knowledge in the effort to preserve a successful organization. With the large augmentation of female nurses our musical functions have not been permitted to deteriorate but their degree of excellency has been steadily maintained and possibly increased.

Another stumbling-block besetting the pathway of this progressive movement, at least in the minds of some executive officers, is the obstacle it is expected to impose to the progress of the patients' weekly dances, the paucity of male employees again being evoked as an interference with this highly important remedial agency. With us, however, this foretold barrier has failed to appear. So we are constrained to the conclusion that all of these prophesied impediments, if given careful and intelligent consideration, may be consigned to oblivion. In other words, there is delineated within our mental horizon the force, potency and truthfulness expressed in the old adage: "Where there is a will there is a way."

Some of the British alienists have stated that during their tours for observation they noticed more seclusion of patients in the Dutch asylums where women are in charge of the men than seemed to them permissible and expressed some misgivings to

the effect that the system under consideration might prove responsible for an increase of the instances in which the men are locked in their rooms. At Independence a report is prepared and filed away as a part of the institution's records showing every time a patient is secluded. This report exhibits the individual's name as well as the number of hours he was confined. The seclusion of male patients resorted to in the institution for Northeastern Iowa is practically nil; and it can be positively asserted that this undesirable method of enforcing discipline has not increased since the advent of the feminine quality of mercy to our male wards.

One of the advantages accruing from the employment of more females and fewer men, in the estimation of some who endorse the proposition, particularly in Great Britain and on the continent, is that the services of the former may be commanded at a lower rate of compensation and therefore the same expenditure of funds will result in the employment of more persons. This consideration has not been permitted to form a part of our calculation nor is it advisable to dignify the notion with very serious deliberation. In the institution which I have the honor to superintend the attendants on the wards for females are paid five and six dollars less a month than the male attendants, who are credited with the same length of service. This custom has not been discontinued since the employment of feminine nurses in the department for males was inaugurated. Every female whose duties are performed in the male wards is granted equal remuneration with the male attendants experiencing similar length of service. As the remuneration, with us, increases with experience and females continue in the service for a greater average duration of time the aggregate amount of the monthly pay-roll has been increased by the institution of the new method. However, the saving effected by more careful attention to detail in the distribution of supplies to the ward and by more systematic efforts to preserve and account for the patients' garments, etc., has rendered the system a matter of economic worth. If a person making a tour of inspection through the male wards at Independence will take the trouble to interrogate the female nurses he finds employed there, those who have experienced similar

service in the women's department will furnish uniform testimony to the effect that they prefer to work with the male patients; they find them more tractable, more easily managed and more appreciative than the symmetrical type of the female. But notwithstanding the fact that their labors may be executed with greater facility, less effort being required in order to control and direct the masculine members of the household, it is advisable for those who contemplate experimenting with this advancement of their hospital equipment, to stimulate and encourage the women they may induce to take the initiative in the movement by means of this additional compensation. It may prove to be a useful auxiliary while inaugurating the innovation and an incentive of value in conquering the superstition and prejudice that exists against the system, the inception of which reposes in prudery and ideas inculcating false notions of modesty.

Not least among the advantages that may be ascribed to this new system is the indication that it allays apprehension on the part of the patient's relatives and the public generally with reference to brutal or inhumane treatment of the inmates by employees. It is with a public institution as with an individual: "A man's character is made by himself; his reputation exists in the minds of others." The invariable tendency of the presence of women among the male patients is to inspire the minds of their friends with confidence in the management and a feeling that these unfortunate men are kindly dealt with. It is a matter of constant recurrence for those interested in the welfare of a patient to solicit his transfer to the wards of which the lady nurses have charge, their requests being accompanied by the announcement that while there he was so much better contented.

The opponents of this system have urged in support of their contention that it stimulates the patient salaciously inclined to indulge in indiscreet secret practices. Here again is observed the similarity of the objection to that presented in more remote times against the present universal custom of educating youths in schools where the sexes are associated. Observation and practical experience long ago proved that the fears entertained for the juvenile members of society along these lines were unnecessary. Likewise the exception taken on this basis to subjecting our male

insane to association with representatives of the gentler sex acting in the capacity of nurses, in the light of our own experience as well as under the observation of others who have made extensive practical tests in this field of inquiry, has proved untenable.

Another consideration of supreme importance is that only women possessed of most exemplary character and entertaining high ideas of morality should be engaged for duty in the male wards. It is, of course, considered desirable to retain the services of no immoral or indifferent women in any of the various departments of the State institutions. The judicious executive officer will ever be on the alert to discover those who may be infected with the loathsomeness of lax morals and will weed them out of the service as rapidly as they can be discerned. But in the selection of females to nurse our male patients the desirability of securing high-minded women is presented for consideration with increased emphasis. If every other reason for this admonition should be submerged from view, it would still prove a matter of essential importance on account of the fact that some of those who have not yet been converted to this new and progressive order of affairs would utilize reports of scandalous deportment on the part of any of these women in their efforts to condemn the entire system. If one woman employed with the male patients should depart from the straight and narrow way, the gossip of the vulgar and the affectations of wisdom, emanating even from officials of institutions where ineffectual attempts to inaugurate the system have been made, or who may be jealous because of the successful efforts of others, would prove altogether too powerful and effective.

A good many observations have been made which induce the belief that the system of management now being considered is responsible for and deserves the credit of promoting the actual recovery of some cases that would not under other conditions progress to the stage of convalescence. For example:

Case No. 7905, B. H. D. was admitted to the hospital June 27, 1899. The cause of insanity was stated to have been overwork and sunstroke. For many months he was very demented, the knee-jerks could not be elicited, his expression was mask-like and

the saliva drooled from his mouth. For several years the case presented a peculiar condition not infrequently met with among the insane which appears to indicate an admixture of depression and dementia. For a considerable length of time a tentative diagnosis of paresis was adhered to. The patient was twice removed to his home by friends actuated by a desire to improve his condition. On one occasion they found it necessary to return him after an absence of but four days, and his second visit was curtailed to a duration of less than a month. Sometime in December, 1904, the patient was transferred to one of the departments in charge of the female nurses, not, however, with the expectation of effecting anything more important than an improved condition of his hospital environment. Under the kindly manifestations of sympathy incident to his new surroundings, the inherent spark of hope which had so long remained dormant appeared to accumulate fresh impetus and he exhibited surprising symptoms of improvement. In the course of a few months he seemed to have regained the full force of his accustomed physical health and wonted mental vigor. Under date of July 25, 1905, the patient was paroled, and three months later he was discharged from the hospital records as recovered. He has continued well to the present time. His aged father, his wife, brothers and the individual members of the commission in lunacy for the county in which he resides, with one accord, whether justly or unjustly, attribute his apparently miraculous cure after all hope had been abandoned and six years subsequently to the onset of the psychosis, to the efficient manner in which the female nurses showered, as the gentle dews from heaven, their tender mercies on him.

Still one other phase of this subject remains to be considered, and at the risk of rendering the paper, which is already too long, tiresome, we shall discuss it briefly. It is a matter of profound importance and one we have not observed in any of the literature extant on this subject. Reference is directed to the effect exerted on the female nurses themselves by continuous association with disturbed and untidy insane males. The deduction has been arrived at that the system is calculated to enhance greatly the interests of the patients and to inspire a sense of confidence on

the part of their friends in the management of the State hospitals; that in a general way it promotes all the interests of the institutions. What about the influence exerted on the nurses themselves?

Several years ago we had reached the conclusion that the substitution to a great extent of female nurses for male attendants in the State hospitals would effect a marked improvement in the treatment accorded the insane. This conviction has become so inherently engrafted that sight was lost of the very patent fact that others might honestly and reasonably hold a diverse view. Therefore, when the system was initiated, not a little surprise and chagrin were engendered on learning that many a disgruntled employee who abandoned the service as a result of his own choice or on account of "mild persuasion" emanating from the management went out to his home in the rural districts or to another institution in some of the adjacent States with the evident intention of heaping abuse and calumny on the women engaged in this noble work, and of inciting maledictions on the head responsible for the inauguration of such an absurd system of mismanagement. The reverberations of these mutterings, while somewhat annoying, were regarded with silent contempt and were rather promptly and abruptly dismissed as the vague rumblings of dissatisfied employees from whom as a matter of course nothing more than censure should be expected.

On one occasion during the course of a conversation with a Roman Catholic clergyman, many of whose parishioners are numbered among our most highly valued women engaged with male patients, he made the startling announcement of his conviction that the employment of women in this capacity is degrading in its effect on them and inadvisable. He was informed that least of all had it been expected that opposition to so laudable an undertaking would be encountered from any department of the Catholic Church. Further he was referred to the management of that retreat which the honorable president-elect of this association so ably superintends and which under authority sanctioned by the Catholic Church is caring for a few hundred male patients with scarcely a male employee to be found on the premises. Our first visit to Mount Hope was made fifteen years ago and many

times since have we remarked about the system, order and air of immaculate cleanliness which pervades every department of the institution. The opinion expressed by the reverend gentleman, being at variance with our own ideas, provoked only emotions of commiseration for the benighted individual who was endowed with sufficient temerity to oppose these beliefs.

On another occasion while engaged in conversation with an Episcopalian minister, he expressed appreciation of the improvement the system had wrought in the care of the insane wards, but suggested misgivings as to the moral effect of such a vocation on the female nurses. This second expression of doubt regarding the propriety of the custom by a minister apparently aroused no spark of tolerance for opposition. The mind that had harbored considerable pride in Scotch and Scotch-Irish maternal ancestry many of whose members were ministers of the Presbyterian, United Presbyterian and even of the Covenanter faith, now that representatives of the church were disposed to question the advisability of what was considered a laudable and progressive movement, semi-consciously revolved the rhetorical utterances accredited to Robert Treat Paine to the effect that the advocates of religious doctrines had clogged the wheels of progress.

Still another gentleman brought information to the effect that one of the judges of the district court, presumably a leader *ex-officio* of public thought, had denounced the association of women with insane men and had suggested inciting newspaper comment in condemnation of such an unheard of and preposterous method.

Yet another person made known that an attorney residing in a neighboring city, whose right to reflect public opinion was vested in the fact that his professional associate is a prominent State official, had criticized the method in unmeasured terms and felt that some form of public protest should be made.

Still more recently, while engaged in conversation with the superintendent of a large hospital for the insane in California, he exhibited no doubt as to the beneficence of the system towards the patients, nor toward any one concerned, except that he entertained grave fears of jeopardizing the morals of women from their association as nurses with insane men. He added that, in his opinion, the moral character of one sane girl was of more im-

portance than the interests of all the lunatics in America. If permitted to make use of a vulgar expression, this was "the last straw that broke the camel's back." Criticism of good work performed in the interest of the patients does not customarily emanate from hospital superintendents themselves. It may be expected that the laity will manifest wonderful interest in the welfare of hospital patients whenever censure is directed against the officials. On the other hand, if deprecatory statements are issued charging the officers with over-exactness, the solicitude of the ever inconstant public becomes all too readily the essence of sympathy for the neglected employee. In other words, the public criticises the officials for negligence if the patients are indifferently cared for, and for being too exacting with the employees when the patients' wants are carefully ascertained and administered unto. The official is thus placed between the upper and the nether mill-stones and forced to a realization during this life, of the truthful sentiment contained in Pope's lines descriptive of the Calvinistic doctrine of foreordination and election, viz:

"You can and you can't,
You will and you won't,
You'll be d—— if you do,
You'll be d—— if you don't."

However, the aspect of the case has changed inasmuch as a hospital superintendent himself is objecting to the new system on the ground of solicitude for the morality of the female nurses.

The opinion of the California superintendent stimulated an introspective study of our convictions and a retrospective analysis of the incidents that had induced such a frame of mind. It was recalled to mind that twenty-five years ago in Cincinnati as a medical student the earnest teachings of Dr. Joseph Ransohoff had been listened to. The professor had just returned from trans-Atlantic meanderings in quest of knowledge of medicinal topics and was inspired with the glowing enthusiasm that is foreign to other than the ambitions arising within youthful subjects. He had said there is no real nurse except the woman and delineated how in Vienna and other European cities, even in the wards for venereal cases, only female nurses were employed. He said that in time Americans would most assuredly adopt the same method.

Notwithstanding great faith in this teacher, it was impossible to realize that such a wide departure from the relations already established and hallowed by ages, which were considered appropriate between the sexes could be made to harmonize with American ideas of morality. And yet in the absence of conscious cerebation concerning this matter, the same convictions that were silently condemned when emanating from our whilom professor are now advocated and even gone one better inasmuch as he had not proposed that the innovation should apply to the matter of caring for the insane. With regard to the prediction that the female should supplant man as the only nurse deserving the name, the practice in vogue in the somber shades and lengthening shadows cast by the sun's rays as he is about to disappear beyond the occidental horizon of the quarter of a century that has since elapsed, stamps the prophetic statement with approval.

It now becomes plainly apparent that the misapprehension expressed, on account of solicitude for the moral welfare of the female nurses, by clergymen, by gentlemen representing the legal fraternity, by the rank and file of the laity and even by medical brethren engaged in our own special department of the service, is the natural and legitimate outgrowth of environment, and if these gentlemen occupy an untenable attitude, an effort should be made to convince them of the error of their way of thinking. A proper regard for the interests of those who now oppose the system, as well as of those who endorse it, and of society in general, requires such a course of action.

No one will oppose the superintendent who states that more importance attaches to properly safeguarding the moral character of one sane woman than of protecting the interests of all the insane men of the Western hemisphere. But does the association of woman with man, the former in the capacity of nurse, the latter as patient, exercise an immoral or degrading effect? Fortunately, the interrogation has already been answered in the negative by society in general with reference to almost every form of nursing except that which especially interests us. Doubtless every one of you can recall nurses within your circle of acquaintance who care for men as well as women in their vocation and whom you would be perfectly willing to have associate on terms of the most inti-

mate companionship with the women concerning whom your solicitude is naturally greatest, viz., your mothers, sisters, wives and daughters. Now, why should the nursing of insane men prove more detrimental to the morals of the nurse than engaging in the same work with sane people? It would appear that if there is any difference in the two conditions it should tend to allay our misapprehensions with regard to nursing the insane; because the latter more nearly resemble children than do those clothed in the right mind, and admittedly nursing and caring for children is within the pale of woman's proper sphere.

But some one possessed of a critical frame of mind remarks that it is dreadful for the nurse to be subjected to profanity and even obscene language emanating from the insane male. This objection may be met with the answer that it is simply surprising how few of the most delirious and maniacal patients will make use of vulgarity and how many on the contrary will suppress expressions approximating the type of lewdness, when the female nurse is present. It is not the desire, however, to be understood as advocating the creation of a belief that the female in the wards with male patients will never be required to listen to conversation calculated to shock one's sense of propriety. If the benefits that the female may be expected to render in the hospital wards are to be reaped in their fullest measure, she must at times contemplate being subjected to this unpleasant feature. But for some reason, an explanation of which we are unable to offer, the male patients are much less likely to employ indecent terms in the presence of the female nurse than are the female patients to make use of obscene expressions during the visit of the male physician. We hold that requiring the nurse to become an auditor to the obscene jeremiade emitted from one of her own sex, especially when the male physician is present, is more humiliating in its effect on her than listening to vile language that may issue forth from the lips of the masculine patient. Yet an environment which creates the greater offense excites no comment while that responsible for the lesser invites considerable criticism from some quarters without logical cause—in fact, without reason at all—save that it has not yet become a firmly intrenched and definitely established usage.

If one's sense of the proprieties of life is so flagrantly violated by the act of enlisting women to nurse male patients and if commingling the sexes in the practice of the arts and sciences that work together for the alleviation of the condition of the sick and the afflicted is calculated to effect them immorally and to hold in abeyance the finer esthetic sense, why look with equanimity and composure upon the habitual practice of the male physician treating the female patient? Why not admit that environment—force of circumstances and possibly the nature of his inherited traits and tendencies—has endowed the representative of the male sex with qualities which make him superior to his helpmeet as a physician or surgeon, but nevertheless protest against his acting in the capacity of medical adviser to the members of the gentler sex and insist that at least all obstetrical and gynecological practice shall be placed entirely in the hands of women, on the theory that association of the sexes while bestowing attention on these important subject matters jeopardizes the moral interests of society? Doubtless the members of this association will sanction the declaration that the practice of medicine does not tend to promote moral decadence on the part of the men who engage in it, but on the contrary, exercises over them an ennobling influence; nor does this custom exert any baleful influence on the female members of the families engaging the professional services of the male medical adviser. Extending over a period now of more than three years' duration we have made close observations and studied carefully and conscientiously the especial effect this system exerts over the female nurses. No incidents whatever have been noted in this time calculated to lead to the belief that this system tends to induce a lax state of morals. When care is exercised in the selection of the women for this work and moderate attention is devoted to the details necessary to insure for them an environment free from grossly contaminating influences, there is no just cause for apprehension that perversion of morals will ensue. Most assuredly the female nurses who are employed in the wards for male patients at Independence will compare favorably with those who are engaged in the same institution caring for the members of their own sex; and we trust that you are willing to indulge us to the extent of regarding it as the ex-

pression of pardonable pride when we aver the belief that our nurses are the peer of those found in any similar institution.

We have considered this subject from the standpoint of every reasonable objection that we are aware of having been urged against it. Those who have perused the writings of that past master in the production of fictitious narrative, Charles Dickens, and, of course, this includes all English-speaking people, know full well how those of his characters for whom the warmest attachments are aroused have been pictured as passing through all the kaleidoscopic transmutations incident to the journey through this life. They may for long and weary years traverse pathways illumined only occasionally by an interspersion of rays denoting the sunshine of hope. In fact, major portions of their individual lives may be consumed in an atmosphere characterized only by the dark clouds of adversity; and yet the eager and sympathetic reader needs to feel but little perturbation of spirits; he may rest pretty well assured that in the end, the final scene over which the master hand of novelistic art lowers the curtain on his drama of their earthly existence and forever dismisses the subjects of our sympathetic interest from consideration will picture them in an environment of pleasure—surrounded by circumstances affording a financial competence, and along with this affluence, friends, and the respectful consideration of an admiring public. In like manner, no matter how dark and appalling the picture drawn of this system of female nursing may be, the investigation of all the points of opposition urged in the contention against it proves to our mind at least that the expected difficulties etherialize when put to the veritable test of actual practice, as well as when studied beneath the limelight of theoretical consideration.

Through all the vicissitudes of fortune incident to the effective institution of this system in the hospital which we have the honor to superintend the members of the Iowa board of control of State institutions have given the work their hearty approval and moral support. It affords much pleasure to be able to attest our cordial appreciation of their zealous interest in this matter. Their endorsement of this innovation has ever been a source of encouragement and tended to induce determination to lead to a successful

issue an undertaking laudable in itself, in spite of the fact that our pathway was beset by the misgivings of doubting Thomases on the one hand and on the other by open hostility and active opposition.

We cannot commend the employment of female nurses for attendance on insane men too favorably. Some years ago the State of Ohio was represented in the United States Senate by a statesman whose unswerving fidelity to the interests of the humbler type of citizens—the plain, every-day, common people—won for him the apt sobriquet of “The Noblest Roman of Them All.” On the floor of the Senate chamber he is reputed to have once asserted that he would choose his own language and permit no one to put words in his mouth. We have not attained such a stage of perfection in the use of articulate or written language; and therefore trust to be a recipient of leniency in closing this paper by reproducing and endorsing a quotation from Superintendent A. R. Turnbull of Cupar, Scotland, who says: “The system has given me much satisfaction and I think every one who tries it on right lines will find it a success.”

MEMORIAL NOTICES.

DR. WILLIAM M. EDWARDS.

Dr. William M. Edwards, medical superintendent of the Michigan Asylum for the Insane, died at the University Hospital at Ann Arbor, Michigan, on April 26, 1905, of heart disease.

Dr. Edwards was born on September 17, 1855, at Peru, Indiana. He attended the district school at his native town and at the age of 16 years entered Smithson College at Logansport, Indiana, pursuing his studies there for one year. The following two years he taught school in his home district. In 1874 he entered the literary department of the University of Indiana. In May, 1880, he began the study of medicine in the office of Ward and Brenton at Peru. He graduated from the department of medicine and surgery, University of Michigan in 1884. The same year he was appointed on the medical staff of the Michigan Asylum and on June 1, 1891, was appointed medical superintendent of that institution.

Dr. Edwards possessed those qualities that would have made him successful in any vocation, but which preeminently fitted him for the position he occupied during the last 14 years. He was democratic in his tastes, genial in disposition and diplomatic in his dealings with the public. He possessed an indomitable will that halted at no obstacles. He could not tolerate mediocrity in anything. His motto was, "Anything that is worth doing at all is worth doing the best that it can be done." He was satisfied with nothing from his subordinates that did not come up to his high ideals. He took great pride in working out every detail of everything that he undertook, believing that it is by the successful management of small matters that great things are accomplished. The management of the institution of which he was superintendent was along conservative lines of progress. He was a close student of the methods employed in other institutions in this country and in Europe and made use of any that he thought

would be of advantage to him in his own field of work. He not only adopted the best methods of others, but he was the originator of many new ideas and methods in his specialty. The treatment of acute curable cases of insanity in detached hospitals especially equipped for that purpose, that has been successfully carried on in the Michigan asylum for several years, was an original idea with Dr. Edwards.

For some years prior to his death he was one of the editorial staff of the "Physician and Surgeon" published at Ann Arbor and special lecturer on insanity in the department of medicine and surgery, University of Michigan. He was an active member of the American Medico-Psychological Association for a number of years, and from 1896 to 1899 served as a member of the council.

The last 18 or 20 years of his life was a struggle against the inroads of disease and the doctor was fully conscious of the fact that he was bound to be the loser. Not a day of his life for many years did he go unprepared for a desperate encounter with the grim destroyer and yet the best work of his life was performed under such depressing conditions.

In his death this association has lost a valued member, the medical profession an earnest co-worker and the country a distinguished citizen.

HERMAN OSTRANDER, M. D.

HENRY PUTNAM STEARNS.

Dr. Henry Putnam Stearns, the subject of this memoir, was born at Sutton, Massachusetts, April 18, 1828, of a family that had been prominent in the annals of Massachusetts.

He was sixth in descent from Charles Stearns, a nephew of Isaac Stearns, who came to America in 1630 with Governor Winthrop.

On his mother's side he was a descendant in the sixth generation from Lieutenant Thomas Putnam, grandfather of Israel Putnam.

His early education was had in the common schools of his native town. He prepared for college at the Monson, Massachusetts, Academy; matriculated at Yale College in 1849, and was graduated in the noted class of '53. He attended medical lectures at Harvard and Yale Universities, and received the degree of M. D. from the latter in 1855.

After obtaining his degree in medicine he went, in the summer of 1855, to the University of Edinburgh for the purpose of continuing his medical studies. While pursuing this post-graduate course he had the good fortune to be selected as interne for the Royal Infirmary, where he became acquainted with several men who were afterwards eminent in the specialty of his adoption, among them the late Sir John Sibbald. After a further course of lectures in Paris, he returned, after nearly two years of study, to take up the practice of his profession.

Thus well endowed by inheritance, and possessed of a liberal education, Dr. Stearns had an unusual foundation for his subsequent broad and full career.

He located, on his return from abroad, at Marlboro, Massachusetts, where he continued in practice until 1859, when, looking for a larger field, he moved to Hartford, Connecticut, which was to be the scene of his work in general practice and the specialty.

April 18, 1861, he was commissioned surgeon of the First Connecticut Volunteer Regiment, at once went to the front, and was

in the first battle of Bull Run. At the expiration of the three months for which the regiment had enlisted, he applied for and obtained a commission in the United States medical service: he was forthwith detailed as brigade surgeon under General Fremont at St. Louis, but was soon assigned to the staff of General Grant, and was with him throughout his career in the southwest, except for a short period when serving as medical director of the right wing of the army under General McClellan. He was subsequently medical inspector of hospitals on the staff of Colonel R. C. Wood, assistant surgeon general; he superintended the building of the Joe Holt hospital at Jeffersonville, Indiana, and was later appointed medical director of the United States general hospitals at Nashville, Tennessee, where there were continuously 10,000 to 11,000 patients under his charge.

In September, 1865, he was mustered out, at his own request, with the brevet rank of lieutenant-colonel.

Dr. Stearns' relations with General Grant were cordial and even intimate, and throughout his life he cherished a deep respect, to which he often gave expression, for those qualities in the general that made him mindful of the needs of the sick and wounded of the army. At the general's personal request he assumed charge of a large steamer used to provide first aid for the wounded, and to transport them to general hospitals; the commission was accompanied with this injunction, "You can deal with me direct, calling on me for anything needed by your patients, and you have my promise that nothing shall delay attention to or cut down your requisitions."

He looked upon his army experience as the most important in his life, teaching, as it did, systematic methods of working and recording results, subordination to authority, recognition of the rights of subordinates, and readiness to assume responsibility.

On returning to Hartford in 1865, Dr. Stearns resumed general practice, and at the time of the call to the superintendency of the Retreat, in January, 1874, he probably had the largest practice in the city, the income from which was largely in excess of the prospective salary as superintendent of the Retreat, but demands upon his strength had occasioned some concern among his friends who urged upon him the wisdom of accepting the call, a step he never regretted.

Before taking actual charge at the Retreat, and several times thereafter, he re-visited Great Britain and the Continent in its interest. He prized highly the opinions and advice of the men whom he had met as a student, and who had become leaders in psychiatry, and that he in turn merited the esteem of these men is attested by the fact that he was made an honorary member of the British Medico-Psychological Association.

The mental poise and reserve, innate refinement, genial manner and quiet dignity which were so characteristic of Dr. Stearns, won for him unusual social distinction during his stay in Edinburgh, as a student, and throughout his life marked his relations with all who came in contact with him socially or professionally.

A considerable measure of his success in the management of people, and this not alone in his institution life, arose from a dominating, rugged personality, with an evident and ingrained honesty that invited respect, and compelled the confidence of those to whom he ministered. The remarkable breadth and freshness of his sympathy can be attested by many to whom the bond it created was the ladder on which the first step was taken from doubt and despair.

The incident that led to Dr. Stearns' appointment to the superintendency of the Hartford Retreat, and the best work of his life was accidental, but the qualities that brought success did not come by chance, they were his by lineage and he made the most of them.

Dr. Stearns was a prolific writer and besides a considerable number of unpublished papers read before the various societies of which he was a member, he wrote several brochures and books among which were:

Parts 1 and 2 Med. Vols. and Parts 1, 2, and 3 Surg. Vols. of the "Med. & Surg. History of the War of the Rebellion"; "Classification of the Insane"; "The Relations of Insanity to Modern Civilization"; "The Insane Diathesis"; "Phases of Insanity"; "The Care of Some Classes of the Insane"; "Expert Evidence in the Case of the U. S. vs. Guiteau"; "Insanity, Its Causes and Prevention"; "Progress in the Treatment of the Insane"; "General Paresis and Senile Insanity"; "The Classification of Mental Diseases"; "The Importance of Cottages for the

Insane"; "Some Notes on the Present State of Psychiatry"; "Lectures on Mental Diseases"; "Commissions in Lunacy."

In his work on "Insanity, Its Causes and Prevention," he deals with a considerable number of problems that had previously received little attention, among them he lays special stress on the mistake of crowding backward children, and on the advantages of an industrial education as a part of the common school system. I quote from the above volume, "When viewed in the light of physiology, or of political economy even, the State should educate her young in such a manner and to such an extent as will tend to give the largest measure of health, both of body and mind to the individual, and make the most self-reliant and self-supporting citizen, rather than give a smattering of algebra or music or astronomy, the remembrance of which will be almost certain to fade into darkness in less than five years after the individual enters upon the active duties of any kind of work in life, which does not require their practical use The occupation at this period becomes, so to speak, wrought into the texture of the nervous system, constituting, as it were, a part of it, so that in after-life it is conducted with much less friction and mental anxiety than would otherwise be certain to exist There can be no doubt that the irritation attending the conduct of a business or employment which has been only half learned, and the disappointments which come from failure and recognized inability have largely to do with creating instability of brain action, and consequent insanity."

The introduction of "trade schools" in recent years implies a general acceptance of the ground taken, and the undue proportion of persons committed to asylums, belonging to that great class of wage earners not well grounded in any trade or profession, would tend to prove the correctness of Dr. Stearns' early observations. It was this ultimate analysis of cause, however, remote from effect, that made Dr. Stearns eminently successful as a physician and alienist.

Dr. Stearns was lecturer in psychiatry at Yale University from 1875 to 1897, when he resigned because of the feeling that his health would not withstand the strain necessary to carry on such additional work.

In 1892 he published for his students and the medical profession his "Lectures on Mental Diseases" which represented the result of his observations, and, even in the shifting nomenclature of the present day, occupies a place as a standard reference.

Dr. Stearns was a member of the American Medico-Psychological Association, of which he was president in 1891; the American Medical Association and the New England Psychological Association. He had served as vice-president and president of the Connecticut Medical Society and of the City Medical Society. He was a member of the Army and Navy Club of Connecticut; the Military Order of the Loyal Legion of the United States; Robert O. Tyler Post, No. 50, G. A. R., of Hartford; the Society of Colonial Wars; the Connecticut Historical Society; the National Geographical Society; the Sons of the American Revolution, and financial and insurance institutions of Hartford.

Dr. Stearns remained in active charge of the Hartford Retreat and had relinquished but few of his duties until the fall of 1904 when, as a result of failing health, he found it necessary to gradually retire from his position, and to tender his resignation March 31, 1905. This had been offered previously and declined, and now its acceptance marked the close of 31 years as superintendent of the Retreat and 50 years in the medical profession.

The following is a part of the minutes adopted by the board of directors at their annual meeting, April 20, 1905:

"For 31 years he has given his time and his powers to the welfare of the Retreat. Faithfully he has passed in and out during those long years of the best part of his life, giving his best efforts for the recovery and comfort of those committed to his care. With high professional acquirements, a thorough knowledge of business matters and of men, a nature sympathetic and tender, and a commendable ambition for success, he has passed through the whole time of his service with honor to himself and credit to our institution.

What more can we ask of any one who shall occupy his place? The improvements which he has made in the Retreat itself, the extension of its grounds, the erection of its cottages, accomplished under his initiative and direction, are fixed examples of his far-seeing but conservative nature. While giving full credit to all

who have gone before, we may consider him as entitled to our most generous praise and consideration."

After a comparatively brief and painless illness he passed away May 27, 1905.

He married at Dumfries, Scotland, Aug. 29, 1857, Annie Elizabeth Storrier, and enjoyed with her nearly half a century of ideal married life, characterized by the deepest mutual respect and affection and terminated by her death, April 16, 1903. A brother, two sons and two grandsons survive him.

W. N. THOMPSON, M. D.

DR. EMMET COOPER DENT.

Dr. Emmet Cooper Dent, the superintendent of the Manhattan State Hospital at New York City, died suddenly on the morning of January 12, 1906, a little after four o'clock, of heart disease. Dr. Dent had always apparently enjoyed remarkably good health and was considered by his friends as a person of strong constitution. He had long been known as extremely fond of athletic and outdoor sports in the hours of relaxation and in earlier years had even been somewhat of an athlete, and consequently the few premonitory signs, such as his abandoning smoking, to which he never was addicted to any considerable extent, etc., were no premonition to his friends of impending danger, and the shock of his sudden demise was consequently all the more severe, because it was so totally unexpected. While absolutely devoted to his work and untiring in his energy and zeal for accomplishment, the doctor had always made it a matter, almost of business regularity, to take his vacation, because of his feeling that he owed this to himself and his family, and that without the needed rest he would be unable to carry the burden of his work. Little by little his cares had grown from what originally was quite a large institution, until it had become probably the largest single collection of insane people cared for in hospital surroundings. In the month of November last, the writer accompanied Dr. Dent on one of his annual vacation trips to the South and during the time they were away, in the camp in the Mississippi Delta section, and afterwards in the uplands of central Mississippi and western Alabama, Dr. Dent was always ready for his share of whatever fatigue each day's outing brought, and after his return home he expressed himself as feeling better than in a very long time.

On the morning of January 11, in accordance with an arrangement made through correspondence by Dr. Dent, several of the superintendents of the New York state hospitals met the doctor at New York City to discuss some business matters. At this time the doctor expressed himself as very much fatigued and

feeling worn, but none of us were particularly impressed by his statements, nor was much thought of what he had said, until after we were informed on the following day of his sudden death.

To one who has been associated as closely as the writer with Dr. Dent, for a period of nearly 20 years, there is a particular sadness in penning these few words in memoriam of one who had become so close a friend. My first acquaintance with the doctor was had about 1886, though we did not become associated professionally until 1888. At the latter time, Dr. Dent was the medical superintendent of the New York City Lunatic Asylum on Blackwell's Island, having been appointed to that position after a number of years' service on its medical staff, in the year 1886. Ever since that time we have continued in the closest personal relations, and it is a matter of great pleasure in speaking of such a friend, to you, his associates, to recall the fact that he was known to every one as a man whose word was implicitly to be relied upon, deeply interested in all that pertained to his professional work, liberal and broad-minded in all the ordinary matters of life, intensely interested in the care of the poor unfortunates placed in his care, and universally beloved by all who came to know him well. During all of the years that we were together, his character was absolutely unchanged in these respects. He was never known to be untrue to principle or to his word, and those who went to him freely, were certain of finding sympathy and encouragement, while in business matters he was painstaking, careful, intelligent and of great perseverance. His ambition was constantly to excel in his professional work and to place the standard of the care of the insane on the very highest possible basis. Often and often in later years, when discussing many of the matters relating to the study of psychiatry, have I heard the doctor express regret that more had not been accomplished, and that a larger number of the actual workers were not more inclined, even than is the case, to fall into the work of original research and to pursue constantly and uninterruptedly, the studies which might lead to a greater success in these directions. While the doctor was a keen lover of nature, fond of outdoor life, and when in the field on vacation trips a most interesting companion, fond of his horses, his dog and gun, as most men are who are of vigorous temperament,

these outings, with him, were always looked upon as solely the means for recuperation, in order that he might return to his work with redoubled vigor and for greater effort. His charming personality endeared him to a very wide circle of acquaintances and whether among his associates at New York, his friends in the South, or, even among casual acquaintances who were attracted by his personality, there was something about him which attracted and won interest from all who were intelligent and observing. At his work or on an outing, it was his custom to throw himself thoroughly into whatever he had in hand, and as well, whether at the bedside or in a medical consultation, or engaged in other work, or when found in the bosom of his family, or with friends, there was something so spontaneous, direct and pleasing in his manner that, his acquaintance, with many, served almost as an inspiration, and all of us who were associated with him professionally realize now that his noble manhood stood for whatever he felt was for the best and most uplifting, in any matter in which he might become interested. An acquaintance with such a character as this cannot but be inspiring and tend to draw us out of the ordinary rut of every-day affairs. We see here a picture of a live, practical, attractive man, of sufficient policy and tact to get along well with all of his varied surroundings, and yet unswerving and devoted to the principle and cause in which he believed.

Dr. Dent was born at Macon, Noxubee county, Mississippi, on October 11, 1857. Following the early days of home instruction and home schools, he attended school at Green Springs, Alabama, under Prof. Tutweiler, and later at the military school at West Point, Mississippi, and afterwards at the theological school known as the Southwestern Presbyterian University at Clarksville, Tenn. He began the study of medicine at the University of Virginia, at Charlottesville, Va., in 1876, but afterwards came to New York City and entered the Bellevue Hospital Medical College, where he graduated February 27, 1879. Shortly prior to his final examination he obtained an appointment as assistant on the medical staff of the New York City Lunatic Asylum on Blackwell's Island, January 29, 1879, and served in various capacities on the said staff from the date of his appointment until 1886, when he was made medical superintendent. He served in this position in

the growing institution, which even then was becoming very large, until this institution was later moved to Ward's Island, about one mile north of Blackwell's Island, in the East river, though a portion of the buildings on Blackwell's Island were retained for some five years. Later, in 1896, the various institutions for the insane of New York City were transferred to the care of the State Department for the Insane, under the supervision of the state commissioners in lunacy, and under the immediate direction of a board of managers, and Dr. Dent was continued as one of the medical superintendents, under the then general superintendent, Dr. A. E. Macdonald having care of the women patients and, served in this position until the two large hospitals for the insane, then known as the Manhattan State Hospital, West, and the Manhattan State Hospital, East, were consolidated on June 1, 1905, at which time he became the superintendent of the consolidated institution and occupied that position until his death.

Dr. Dent was an active and prominent member of the medical profession at New York City and during the last few years of his life he had become connected with the New York School of Clinical Medicine, as professor of psychiatry, and gave regular lectures to classes of students, as well as demonstrations at his hospital.

Among the various medical societies and associations of which he was a member are the following:

The Academy of Medicine, the Medico-Surgical Society, the Physicians' Mutual Aid Association, the American Medico-Psychological Association, the Psychiatrial Society, the New York State Medical Society, the Medical Society of the County of New York and the Medical Association of the Greater City of New York.

In other societies, he was a member of the Lotus Club of New York City, the New York Southern Society, an associate member of the Confederate Veterans, and a member of Holland Lodge No. 8, F. & A. M.

In connection with his active professional work among the insane many changes in treatment were carried on, or were introduced by Dr. Dent, particularly in the last 10 years of his life.

His out-of-door treatment in pavilions and tents, not only for cases of tuberculosis, but for various forms of insanity, the attention which he gave to hydrotherapy, particularly in connection with the use of the continuous bath, about which he and others have written considerably, and in a general way, his modifications of methods directed towards intelligent, humane and progressive care, are more or less known to you all, his general attitude in connection with his work endearing him to both patients and employees throughout his entire service. During the course of his administration on Blackwell's Island and Ward's Island, Dr. Dent saw the care of the insane transformed from the old county care system, with insufficient and inadequate appropriations and what would now be looked upon as insufficient care, to the basis of one of the most modern and carefully equipped hospitals, where everything is done for the patient that scientific care and treatment can suggest.

By the death of Dr. Dent the people of the State of New York, the nearly 5000 patients that were under his direct supervision, the officers and employees, the members of the medical profession and his associates and friends have lost a most able, disinterested and faithful associate and friend, whose loss will long be deplored, particularly by those who knew him best. Let us hope that the memory of his fine traits of character may stir us all to emulate the life he strove to live among us and to draw us closer together in helpfulness to all, especially towards those needing our charity and aid.

WM. AUSTIN MACY,
CHAS. W. PILGRIM,
G. A. SMITH.

The members of the Council of the American Medico-Psychological Association held a meeting at the Hotel Astor, New York City, on Tuesday, January 16, 1906, at which meeting they appointed, by formal resolution, a committee of three members of the Association, consisting of Dr. Wm. Austin Macy, Dr. George A. Smith, and Dr. Charles W. Pilgrim, to draw resolutions expressive of the loss of their late fellow-member, and the late Secretary of the Association, Dr. Emmet Cooper Dent.

The Council further directed by resolution that the said committee cause a copy of the resolutions prepared by them to be

forwarded to the immediate family of Dr. Dent, and that the said resolutions also be spread on the minutes of the Association, and other copies be forwarded at once to the principal medical journals.

The Special Committee appointed by the Council have prepared the following resolutions:

WHEREAS, By the death of our late associate, fellow-member and secretary, this association has been deprived of one of its most worthy members and progressive workers, and

WHEREAS, We, his associates, have lost a dearly loved comrade, whom we honored for his integrity, uprightness of character, and sterling worth, whom we respected for his well known high standards in professional and in ordinary living, whom we admired for his unselfish devotion to all that made for a higher manhood, and for his steady and unflagging interest in the suffering humanity to which he ministered, and whom we all loved as an ever loyal friend and companion; therefore, be it

Resolved, That we extend to the bereaved family our heartfelt sympathy in their grief and the assurance that his memory will ever remain cherished by us.

(Signed)

WM. AUSTIN MACY,
G. A. SMITH,
CHAS. W. PILGRIM.

BENJAMIN BLACKFORD, M. D.

It is a beautiful custom of this association to have personal friends to tell, at our annual gatherings, of the life-work and bear testimony to the virtues of those of our coworkers who have laid down their earthly burden and gone to their reward.

In complying with this time-honored usage I shall not enter into fulsome praise of Dr. Benjamin Blackford, late superintendent of the Western State Hospital, at Staunton, Va., but shall simply tell briefly of some of his good works, and of the high esteem in which he was held by those who knew him best.

After a life replete with usefulness to his fellowman, the subject of this sketch died at his home in Staunton, December 13, 1905, at the age of 71. He once said to the writer that he hoped that he would be at his post of duty in the State hospital service when his final summons came, and so it was—he virtually died “in harness.” While performing some official duty in connection with the water supply of the hospital, he was exposed to too severe weather—pneumonia rapidly developed, causing his death a few days afterwards.

Though for a year or two he had not been in vigorous physical health, he had continued to direct, and give personal consideration to the administrative and medical work of the institution. Never did he fail to manifest the deepest interest in the unfortunates entrusted to his care, and in the insane of the State generally.

Dr. Blackford was a Virginian by birth—a Southern gentleman of the old régime—descending from one of the most honorable families of that old commonwealth. There he was reared and educated amidst the most refining influences. Beginning his medical studies at the University of Virginia, he completed the curriculum at the Jefferson Medical College, Philadelphia, in 1855. Immediately after graduating he was appointed to the position of resident physician at the far-famed Blockley Hospital, which he held acceptably for two years. Returning home, he, lo-

cated in Lynchburg, where he practised his profession until the beginning of the Civil War, when he was appointed surgeon in the Confederate States Army, 11th Virginia regiment. Soon showing marked executive ability, the young surgeon was appointed surgeon-in-charge of the military hospital at Culpepper, and later transferred to other hospitals in the State. He remained in the service until the surrender at Appomattox.

After the close of the war he resumed general practice at Lynchburg, where he remained, meeting with a full share of professional success, till he was appointed superintendent of the Western State Hospital, at Staunton. He held a number of prominent positions in the State and local medical societies, being president of the State Society in 1888.

He was a frequent contributor to medical journals and newspapers. His style of writing was clear and ornate, and at times classic to a marked degree. His annual reports, which were always written in an easy, attractive manner, contained many valuable suggestions regarding the care of the insane and the management of State institutions.

In January, 1871, he married Mrs. Emily Neilson Byrd, of Baltimore. Just two weeks before his death she died. Six sons survive.

In 1889 he was appointed superintendent of the State Hospital, at Staunton, and at once instituted an improved system of management; many improvements were made in matters material, administrative, and medical. With honesty of purpose and a clear insight into the needs of the insane, he met the daily problems which confronted him and administered the affairs of the institution, faithfully and intelligently.

The resolutions adopted by the board of directors of the State hospitals contained the following:

"Few occupying a public trust ever held it in more reverence, or executed it with more fidelity. He administered to those under his care with sympathy, kindness, charity, patience, and the best of that skill with which nature and education had endowed him. Under all circumstances he maintained his poise, his dignity never departing, and at all times commanded respect, confidence, and esteem."

A gentleman of culture, courtly manners, genial personality, generous impulses, faultless integrity and honor, considerate and just in all his dealings, Dr. Benjamin Blackford won friends, who were ever true to him, as he was to them.

"He rests from his labors, and his works do live after him."

WILLIAM FRANCIS DREWRY, M. D.

DR. DAVID DORRINGTON RICHARDSON.

David Dorrington Richardson, son of Major George Park and Sarah Ann Richardson, was born May 11, 1837, at Richmond, Virginia, and died March 6, 1906, at Norristown, Pennsylvania.

His preparatory education was gained at Transylvania University, Lexington, Kentucky, from the medical department of which he was graduated as an M. D. at the termination of his third course of lectures in February, 1858. He removed to Philadelphia the following spring and organized the school of preparation for the degree of doctor of medicine and for the medical staff of the army and navy which proved to be very successful.

Dr. Richardson served three years, 1858 to 1861, as interne in the Howard and Philadelphia hospitals. In 1861 he was appointed resident physician in charge of the Northern Dispensary of Philadelphia, and held this position until December, 1866, when he was appointed superintendent and physician-in-chief of the Philadelphia Hospital, Department for the Insane.

In 1871 he was graduated M. D. from the University of Pennsylvania, Department of Medicine. In 1879 he was appointed superintendent of the State Hospital for the Insane, Warren, Pennsylvania, organizing that institution and superintending it until July, 1881, when he was unanimously recalled to the Philadelphia Hospital. This was his second call to this institution, from which he retired in 1886 to engage in private practice. Institution life and work were, however, more attractive to him, and he again took the superintendency of a hospital for the insane in 1889, this time of the hospital at Farnhurst, Delaware, which he organized and conducted until 1893 when he took charge of the male department of the State Hospital for the Insane at Norristown, Pennsylvania, where he was at the time of his death.

Dr. Richardson's interest in anatomy made him a frequent visitor to the dissecting room and for eight years he held the post of demonstrator in the Philadelphia School of Anatomy, of which the late Dr. D. Hayes Agnew was principal. He was also as-

sistant demonstrator of anatomy in the University of Pennsylvania for several years.

Dr. Richardson published the "Chemical Remembrancer," "Old and New Notation of Chemistry Reconciled," and "Clinical Lectures on Insanity." He was a member of the American Medical Society, The American Medico-Psychological Society, The Philadelphia County Medical Society, and the Philadelphia Neurological Society.

He married in 1860 Margaret Spear Hancker, who died in 1894. While the foregoing facts comprise the salient points in Dr. Richardson's career, they really convey no idea of the man himself or of the loss sustained by our branch of the profession in his death. To organize two large hospitals is a great task, but it is a far greater one to create an atmosphere of love and confidence and respect among both patients and employees. This, Dr. Richardson was enabled to do to a degree I have never seen equaled, and it is impossible to estimate the value of this influence which he exerted. It was my privilege to be assistant to Dr. Richardson for several years and during this close association I learned as I could have done in no other way his unvarying kindness and sympathy for those who were in his care. No sacrifice of personal comfort or convenience was too great for him to make in the interest of his patients and he was always ready at any hour of the day or night to come to their assistance. He fully carried out the idea of the individualized care of the insane, and while his patients appealed to the scientific side of his mind as cases or types, they appealed even more strongly to his compassionate interest as suffering human brothers. A superintendent with such ideals cannot fail to impress his personality on every department of his hospital. So far from becoming hardened or calloused by the constant sight of suffering, he became more and more patient and sympathetic as time went on. The very evening that his death occurred, he had gone into the wards to visit a patient in whom he was much interested and had found so many others who wanted his sympathy and counsel in their sorrows, that he was not able to return to his office until a late hour. While the world in general could not realize the compassion which led him to give so largely of his strength and time to his patients

as individuals, it was thoroughly appreciated by the patients themselves, and I have never seen a man so universally loved and respected by those in his care. At the time of his death a memorial notice appeared in the daily paper and inasmuch as it was felt by all who knew Dr. Richardson intimately to be a just and fitting tribute to him, I will quote it.

IN MEMORIAM.

Dr. David Dorrington Richardson, the Chief Resident Physician of the State Hospital for the Insane, who so suddenly and unexpectedly died on Tuesday evening, was one of the most distinguished and able members of his profession.

Those who knew him best were continually surprised at some new exhibition of his unfailing kindness, his forbearing tenderness, his gentle sympathy and love for all unfortunate and afflicted ones.

Kind in spite of insults, more tender for reviling, more loving for personal indignities, his was a sweet and noble character whose life and works were a continual inspiration for the good.

He was good for good's sake, good to those whom he knew by no possibility could ever return his kindness or even appreciate his tender care of them.

He has gone, he has fought the good fight, he has kept the faith and has now entered into the joy of his Lord, whom he loved so well and followed so faithfully.

Oh, sure indeed, must be his reward, and the perfume of his kindly acts will rise in a glorious cloud of incense to the great White Throne of heaven.

ONE OF HIS FORMER PATIENTS.

Perhaps the high regard which those who knew Dr. Richardson best had for his character may be shown by the following resolutions which were adopted by the employees and by the trustees of the Norristown Hospital.

At a meeting of the employees of the male department of the State Hospital for the Insane, Norristown, Pennsylvania, held March 12, 1906, the following minute was unanimously adopted:

WHEREAS, It has pleased Almighty God to remove from our midst our beloved chief, Dr. David Dorrington Richardson, who for thirteen years has been in charge of the Male Department of this hospital; and

WHEREAS, In the death of Dr. Richardson the institution has lost a valued friend and wise counsellor, and we, the employees of the Male Department, have lost a kind and sympathetic chief, one who was considerate in his actions, always ready when duty called, showing his affection for the patients and the employees; therefore, be it

Resolved, That we bow in humble submission to the Divine will;

Further be it resolved, That we extend to the family of our late chief our sincere and heartfelt sympathy in this hour of their bereavement; and be it also

Resolved, That a copy of these resolutions be suitably engrossed and presented to the family of the deceased.

THOMAS L. WILSON,
D. P. HENNESSY,
FRANK H. EAGAN,
Committee.

April 13, 1906.

At a stated meeting of the board of trustees of the State Hospital for the Insane, Norristown, Pa., held April 6, 1906, the following resolution was adopted:

IN MEMORIAM.

In the announcement of the death of Dr. D. D. Richardson, late Physician-in-Chief of the Male Department of this hospital, which occurred suddenly at night, March 6, 1906, of neuralgia of the heart, the members of the Board of Trustees were greatly shocked and pained. The sad event was as unexpected as it was deplored.

His services to the institution, so valuable and faithful in performance, had continued, uninterrupted, for the period of nearly thirteen years. His uniform kindness, and watchful care of the patients under his charge, with intimate personal attention that he gave to their various needs and demands, endeared him to them by close and enduring ties.

He possessed a remarkably gentle and obliging disposition, so that all who came under his influence, felt the charm of his kind and loving nature. His ability as an alienist and neurologist was of a high order, and his close and long-continued study of insanity and nervous disorders placed him abreast with the best authorities in this country or anywhere else on these subjects.

The Board of Trustees desire to express their profound appreciation of his valuable services to the hospital, and his strict fidelity to all its exacting duties, during the entire period of his incumbency here.

It is the wish of this Board of Trustees to record upon its minutes the high regard that each member entertains for his memory as a faithful and worthy officer of this institution, as a man of pure and spotless character, a Christian gentleman, and a valued citizen. His loss is greatly deplored.

J. M. HACKETT, *Secretary.*
MORRIS S. GUTH, M. D.

DR. CHARLES H. LANGDON.

Dr. Charles H. Langdon, second assistant physician at the Hudson River State Hospital, Poughkeepsie, N. Y., died November 15, 1905. His death was due to appendicitis. Dr. Langdon was born in New York City in 1853. He received his literary education in Fordham College, and graduated in medicine from the College of Physicians and Surgeons in 1874. He became deeply interested in the study of nervous and mental diseases from the beginning of his medical work and was appointed to the staff of the Hudson River State Hospital in 1877. From that time Dr. Langdon was continuously in the service of the hospital up to the time of his death with the exception of a very brief period during which he engaged in private practice in Poughkeepsie. Dr. Langdon was an earnest student of medicine and found time in the midst of his arduous duties to read the current medical literature and keep himself in touch with important advances made in his profession. He was recognized by all of his associates as a coworker possessing sound judgment, a warm heart, and extraordinary capacity for work. He was greatly liked personally in every respect and he had many warm friends in as well as out of the profession. During the long period of his connection with the Hudson River State Hospital he had under his personal care at all times many unfortunates to whom his unvarying kindness was a never-failing source of comfort, and his interest and zeal for their welfare was unflagging. He leaves to mourn his loss a wife, a son, a daughter, and an aged mother.

CHARLES W. PILGRIM, M. D.

INDEX.

- Addison's Disease, 279.
Address, Annual, 125.
 Dr. A. T. Cabot, 56.
 Gov. Guild, 54.
 Presidential, 99.
 Dr. H. P. Walcott, 58.
Adults, Maniacal Conditions in,
 353.
After Care, 76.
Alcoholism. Neurofibrils in
 Chronic, 377.
Ayer, Dr. Jas. B., 323.
Arteriosclerosis, Cerebral, 323.

Bancroft, Dr. C. P., 163, 209.
Bacteriology of Paresis, 153.
Beemer, Dr. N. H., 75.
Blackford, Dr. Benj., 579.
Blumer, Dr. G. A., 79, 213, 266.
Burgess, Dr. T. J. W., 78, 205.
Burr, Dr. C. B., 53, 59, 61, 64, 73,
 74, 96, 99, 521.
By-Laws, 50.

Cabot, Dr. Arthur, 56.
Carlisle, Dr. C. L., 353.
Cerebellar-Vestibular, The, Syn-
 drome, 311.
Cerebral Arteriosclerosis, 323.
 Lues, Neurofibrils in, 377.
Clark, Dr. J. C., 523.
Clarke, Dr. C. K., 87, 204, 261.
Clinical Report, Addison's Disease,
 279.
Committee, Nominating, 65.
 Report of, 82.
 Of Arrangements, Report, 59.
 Auditing, Report of, 80.
 Testimonial for Dr. Hurd, Re-
 port of, 86.
 On Census Statistics, 90.
 On Resolutions, Report of, 96.
 On Programme, 98.
 On Training Schools, 84.
Constitution, 45.
 Amendment to, 81.
Copp, Dr. Owen, 329, 345.
Coriat, Dr. I. H., 264, 311.
Council, Report of, 62, 85.
Cowles, Dr. Edward, 203.
Crumbacker, Dr. W. P., 535.

Dementia, Clinical Aspects of
 Paretic, 225.
Dementia, History and Use of
 Term, 213.
 Præcox, in Psychiatry, 301.
 Prognosis and Treatment of,
 261.
 Paralytica, Neurofibrils in, 377.
 Studies in, 247.
Dements, Condition of Heart in,
 347.
Dementia Senilis, 377.
Dent, Dr. E. C., 61, 573.
Deterioration and Practical Psy-
 chiatry, 441.
Dewey, Dr. Richard, 345.
Differential Diagnosis in Paretic
 Dementia, 225.
Drew, Dr. C. A., 471.
Drewry, Dr. W. F., 581.

Edgerly, Dr. J. Frank, 501.
Edwards, Dr. Wm. M., 565.
Epilepticus, Status, The Treatment
 of, 493.
European Hospitals for the Insane,
 523.
Eyman, Dr. H. C., 161, 511.

Family Care of Insane, 329.

- Fiction, Physician as a Character in, 99.
 Flood, Dr. Everett, 455.
 French, Dr. Edward, 347.
 Frost, Dr. H. P., 271.
 Fuller, Dr. S. C., 377, 427, 498.
- Ganser's Symptom-Complex, etc., 271.
 General Paralysis, Neurofibrils in, 377.
 Geographical Distribution of Members and Institutions, 28.
 Guild, Gov. Curtis, Jr., 54.
 Guth, Dr. M. S., 585.
- Heart, Condition of in Dements, 347.
 Hill, Dr. C. G., 72, 73, 207.
 Hill, Dr. G. H., 482.
 Honorary Members, 44.
 Hospital, A, Composite, 455.
 Application of Cottage Plan to, 433.
 European, for Insane, 523.
 Nurses in Insane, 535.
 Hughes, Dr. C. H., 148, 208, 265, 322, 351, 493, 521.
 Hurd, Dr. H. M., 74, 75, 77, 149, 343.
 Hysterical Insanity, etc., 271.
- Idiocy, Neurofibrils in Microcephalic, 377.
 Insane, European Hospitals for, 523.
 Family Care of, 329.
 Hospital, Training School in, 195.
 Night Nurses for, 191.
 Nurses in Hospitals for, 535.
 Statistics of the, 505.
 Insanity and Suicide, 289.
 Hysterical, etc., 271.
 Medical Treatment of, 483.
 Types of, 231.
 Unity of, 137.
- Journal of Insanity, Report of Editors, 64.
 Appropriation for, 86.
- Knapp, Dr. J. R., 441.
 Koren, Mr. John, 90, 505.
- Lane, Dr. E. B., 195, 211.
 Langdon, Dr. C. H., 586.
 Langdon, Dr. F. W., 153.
 List of Members, 9.
 Lyon, Dr. S. B., 202.
- McBride, Dr. Jas., 344.
 McDonald, Dr. Wm., 87, 247, 266.
 Mabon, Dr. Wm., 76, 78.
 Macdonald, Dr. A. E., 91.
 Macy, Dr. W. A., 577.
 Mal-Assimilation as a Causative Factor, 501.
 Male, The, Nurse, 177.
 Maniacal Conditions in Young Adults, 353.
 Medical Treatment of Insanity, 483.
 Members, Honorary, 44.
 List of, 9.
 New, 62, 85, 91.
 Present at meeting, 65.
 Memorial Notices, 565.
 Men's Wards, Women Nurses on, 163.
 Meyer, Dr. Adolf, 268.
 Miller, Dr. H. W., 265, 279, 426.
 Microcephalic Idiocy, Neurofibrils in, 377.
- Neff, Dr. Irwin H., 225.
 Neurofibrils in Paresis, Senility, Alcoholism, Lues, and Idiocy, 377.
 Nominating Committee, 65.
 Nurses, In Hospitals for Insane, 535.
 Male, 177.
 Night, For Insane, 191.
 Women, on Men's Wards, 163.

- Officers, iii, v.
 Ostrander, Dr. Herman, 566.
- Page, Dr. C. W., 86.
 Paresis, Bacteriology of, 153.
 Neurofibrils in, 377.
 Paretic Dementia, Clinical Aspects
 of, 225.
 Pathological Report of Addison's
 Disease, 279.
 Perry, Dr. M. L., 493, 499.
 Pilgrim, Dr. C. W., 289, 586.
 Presidential Address, 99.
 Proceedings, 53.
 Problems in Psychiatry and Pen-
 ology, 471.
 Prognosis of Dementia, 261.
 Prospect—Retrospect, 511.
 Psychiatry and Experimental Psy-
 chology, 125.
 Dementia Præcox in, 301.
 Practical, and Deterioration, 441.
 Psychoses, 231.
- Retrospect—Prospect, 511.
 Richardson, Dr. D. D., 582.
 Rowe, Dr. J. T. W., 301.
- Searcy, Dr. J. T., 231, 266.
 Smith, Dr. G. A., 433.
 Statistics of the Insane, 505.
 Status Epilepticus, The Treatment
 of, 493.
 Stearns, Dr. H. P., 567.
 Stockton, Dr. Geo., 202.
- Studies in Dementia, 247.
 Suicide, Insanity and, 289.
 Symptoms, Mental in Addison's
 Disease, 279.
 Syndrome, The Cerebellar-Vestib-
 ular, 311.
- Table of Contents, vii.
 Thompson, Dr. W. N., 572.
 Tomlinson, Dr. H. A., 79, 137, 149,
 205, 452.
 Training School in Insane Hos-
 pital, 195.
 Treasurer, Report of, 63.
 Treatment of Dementia, 261.
 Of Status Epilepticus, 493.
 Tuttle, Dr. G. T., 53, 55, 59, 177,
 209.
- Unity, The, of Insanity, 137.
- Visitors to Meeting, 70.
- White, Dr. William A., 82, 89, 206.
 Witte, Dr. M. E., 483.
 Women Nurses on Men's Wards,
 163.
 Woodson, Dr. C. R., 191, 210.
 Woodworth, Prof. R. S., 125.
- Young Adults, Maniacal Condi-
 tions in, 353.
- Zeller, Dr. Geo. A., 208.

Additions and Changes to June 1, 1907.

- Barnes, H. L., M. D., *Superintendent Rhode Island State Sanitarium, Wallum Lake, R. I.*
- Bennett, Alice, M. D., *145 Milton Street, Brooklyn, N. Y.*
- Coriat, Isador H., M. D., *440 Newbury Street, Boston, Mass.*
- Franklin, Chas. M., M. D., *5 East Preston Street, Baltimore, Md.*
- Hills, Frederick L., M. D., *Superintendent Massachusetts State Sanitarium, Rutland, Mass.*
- Macdonald, Alexander E., M. D. Deceased.
- Magness, Frank Hosmer, M. D. Deceased.
- Preston, R. J., M. D. Deceased.
- Richardson, Wm. W., M. D., *Chief Physician Male Department State Hospital for Insane, Norristown, Pa.*
- Simpson, J. C., M. D., *1421 Massachusetts Avenue, N. W., Washington, D. C.*
- Skoog, A. L., M. D., *Assistant Physician Woodcroft Hospital, Pueblo, Colo.*
- Smith, Gilbert T., M. D., *Assistant Physician Stamford Hall, Stamford, Conn.*
- Tobey, H. A., M. D., *12 The Lincoln, Toledo, Ohio.*
- Wilgus, Sidney D., M. D., *Chairman State Board of Alienists, Room 2074, No. 1 Madison Avenue, New York, N. Y.*

RC
326
A5
1906

American Psychiatric
Association
Proceedings of the annual
meeting

Biological
& Medical
Serials

PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET

UNIVERSITY OF TORONTO LIBRARY

STORAGE

